NEW REMEDIES.

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EDITORIAL.

THE season has again arrived for reopening the schools of medicine and pharmacy. With the latter, the more thickly settled portions of our country are fairly provided, and in most of them a laudable effort is made to furnish thorough and practical instruction, and to require of students a degree of familiarity with the subjects taught, which can only be acquired by diligence and application. Reference to the advertising pages of this number will show where most of the pharmaceutical schools are located, and an application by postal card or letter to the Dean or Secretary of each Faculty will secure the receipt of a circular containing full details of the curriculum, fees, requirements, and advantages of each school.

We have already referred, at length, to the very considerable changes and improvements which the College of Pharmacy in this city has been able to make during the summer just past, through the acquisition of the building at 209–211 East Twenty-third Street, between Second and Third Avenues; and we would now like further to call the attention of students at the seven medical schools in the neighborhood to the advantages they would derive from attendance on the evening course of the College of Pharmacy.

It is a lamentable fact that the knowledge of materia medica, pharmacy, and chemistry acquired at most medical schools is far below what is essential to an intelligent practice of medicine; and we are quite sure that, in the case of junior students, much time spent in attendance on clinical lectures might better be devoted to the pursuit of study in some of these elementary branches.

THE following letter from the Local Secretary of the American Pharmaceutical Association will interest many of our readers:

DEAR SIR:—In reply to yours of 30th ult., I had arranged for a very convenient exhibition room near the place of meeting for Sept. 3d, and have articles from several parties for exhibition. I shall have equally satisfactory arrangements for the meeting whenever it may be held. There will be a competent person in charge of the exhibition room, who will take charge of the goods sent, and be responsible for them. There are no laws in our State which will in the slightest degree interfere with the exhibitors or their goods. The hotel accommodations will be as good as are to be had anywhere in the South. I think from indications that the meeting will be held on Tuesday, Oct. 29th.* We always have frost by Oct. 15th.

J. W. RANKIN.

ATLANTA, GA., Sept. 2d, 1878.

There can be little or no risk of contracting yellow fever at the time now proposed for the meeting, and it is hoped that there may be a full attendance. All delegates who have not already provided themselves with the proper credentials should *at once* write to the Permanent Secretary, Prof. John M. Maisch, 145 North Tenth Street, Philadelphia, who will furnish blank forms.

A RECENT telegram from Memphis, giving some particulars regarding the terrible epidemic of yellow fever now raging there, speaks of the fact that but two pharmacies in the city remained open. We would like to publish the names of those men who had the pluck to stay at their posts.

IN our notice of the "Paragon Lung Protector," on page 254, we were wrong in stating that it is made by W. A. Hoyt & Co., of 72 Church St., Boston; it is, on the contrary, manufactured by George Burwell, 72 Church St., who, although senior partner in the afore-named firm, is the sole owner of the "Lung Protector."

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*[Some time in November is more probable.—ED. NEW REMEDIES.]

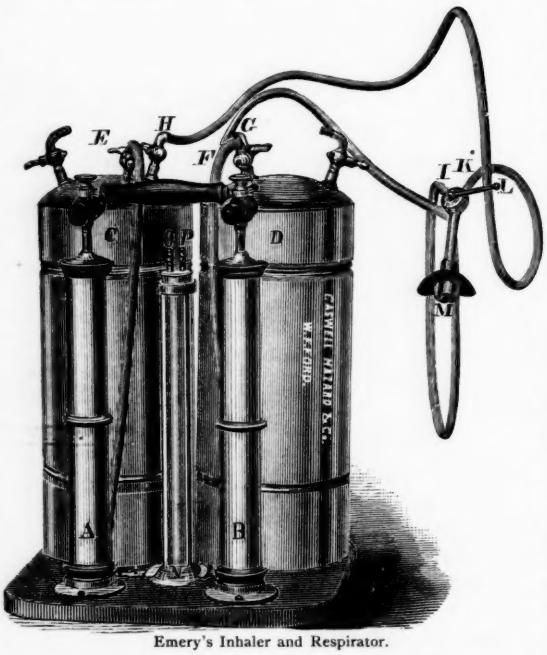
MATERIA MEDICA, PHARMACY, AND THERAPEUTICS.

A NEW INHALER AND RESPIRATOR.

E. L. R. THOMSON, M.D.

For a number of years past, the attention of many physicians has been particularly directed to the application of compressed and rarefied air to the treatment of certain pulmonary and cardiac diseases, and various devices have been invented for the purpose of invigorating the lungs with rarefied air, but most of them seem to fall short of their best intentions.

Fränkel's apparatus, although inexpensive and easily transported, is still objectionable for several reasons. It is made after the manner of an accordeon bellows, and is worked by the hands; the amount of muscular strength expended in working it would therefore be liable to detract seriously from the benefit which the patient might otherwise derive from its use, and after a time the leather absorbs exhaled matters, by breathing which subsequent patients are more or less liable to become contaminated.



Emery's Inhaler and Respirator.

Hanke's apparatus, according to Waldenburg, was found to be defective in two important points, viz, the irregularity of its working, and the limited degree of rarefaction and condensation that could be obtained by it. The apparatus of Waldenburg remedies these defects, and to the present time has been the most efficient and convenient for stationary use. It is probable that these shortcomings will eventually be overcome, and a machine constructed which shall be so perfect in its workings that the most skeptical will be willing to acknowledge all that we to-day hope for it, and certainly if the "Apparatus of the Future" equals our expectations, the benefits to be derived from its use will be undeniable, perhaps incalculable.

It is not claimed that Mr. Isaiah Emery, of New Haven, Connecticut, is about to completely revolutionize the construction of inhalers and respirators, but he has certainly made some valuable improvements upon the well-known apparatus which are worthy the attention of physicians. We will attempt a brief description of these improvements, hoping they may be of use to such physicians as are interested in this particular mode of treatment for pulmonary diseases, especially for pulmonary tuberculosis and emphysema.

In the accompanying illustration, A and B denote air-pumps, now represented as a double-acting pump, and to these, by suitable pipes, are connected the chambers or receptacles D and C. The one designated as C is designed to contain compressed air, supplied or filled by means of its pump and the connecting tubes. The other (marked D) is intended for the vacuum chamber, whence the air is drawn off by a second pump. Intermediately between the said pump and the chamber B is the chamber or vessel N, which is adapted to hold fresh water, medicated liquid, gas, or any suitable or proper material, substance or compound, wherewith to saturate or charge the air in the chamber C, if so it should at any time be desired. The pipes can be easily arranged for such result, or these may be employed simply to carry fresh air; the chamber N being otherwise wholly empty.

From the chambers or receptacles D and C, the pipes I and K (preferably flexible, and at proper places supplied with cut-offs or cocks) H and G, connect with the mouth-piece M, or each may have a separate mouth-piece. If desired, a spraying device can be attached and used in connection with the tube or pipe K; such a device could, if desired, be used to minutely diffuse the liquid contents coming from the receptacle N.

The new points in this machine are three in number, viz., first, the combination of the condensed-air chamber or receptacle with a vacuum-chamber and air-pump, and with a mouth-piece or pieces, and connecting pipes or tubes; second, the combination of a vessel N with pipes, and

the air-pump, and the chamber C, and mouth-piece L, and the tube K; third, the combination with the mouth-piece of a sprayer.

The operation of this machine is very simple. The compressed-air chamber having been charged or filled, and the vacuum-chamber duly exhausted, the mouth-piece is applied to the patient's mouth. The cock in the compressed-air tube K is then opened, and the patient inhales compressed air, which thoroughly fills the lungs and expands them. The cock in this tube is then closed, and that in tube I opened.

Therefore, by means of the vacuum-chamber, the patient will exhale almost all the air from his lungs, and thus an almost complete contraction of the air-cells will be produced. The process can be continued as long as desirable.

There is no possible means of contamination in the use of this machine, as the compressed air which is inhaled from one cylinder, on passing out of the lungs, is exhaled into another entirely distinct from the first, this being all done without removing the mouth-piece from the mouth. Each machine is provided with two mouth-pieces, so that while one is being used, the other can be thoroughly cleansed, thus obviating all danger which might arise from the use of such an article previously used by syphilitic or other cases, producing an unhealthy condition of the mouth or throat. The machine is of such size as to be easily transported, and can be used for office cases, or at the house of the patient, if so desired. It promises to be of great advantage in the resuscitation of persons in a state of asphyxia by submersion, and by inhalation of noxious gases, and in restoring animation in other instances, where, from any cause, the vital power has become low, or the power of expanding or contracting the lungs has, for any reason, become weakened. The U. S. Government, I understand, has already acknowledged its value by ordering the apparatus for trial at one of the life-saving stations on our stormy coast, and if physicians find that it meets a long-felt need in their practice, Mr. Emery may well be satisfied with his ingenious invention.

115 Elm Street, New Haven, Ct.

Anatomical Preparations for Museum and Class Purposes.

Mr. L. C. Miall, of the Leeds Museum, writing in *Nature*, refers to many defects of the ordinary fluid preservatives. Evaporation, blanching, spilling, optical distortion, the cost and inconvenient shape of glass vessels—these are among the serious and apparently inevitable advantages of dilute spirit. He has found it possible to get rid of all these difficulties together by mounting dissections and entire animals in glycerin jelly.

The following directions are his :—Soak gelatine (best quality) in water until it has absorbed as much as it can, melt and add an equal bulk of best German glycerin. Clarify with white of egg, one egg to a pint of mixture, taking care to boil very steadily, without burning. Filter hot through flannel. The jelly should be transparent, and of a pale straw-color.

The jelly may be diluted with water, with glycerin, or with a mixture of the two. I find one part of jelly to one of glycerin and one of water a convenient proportion. The dilute jelly is apt to run fluid on exposure to the air, owing to the growth of moulds. This may be prevented by using a solution of salicylic acid or thymol in water for dilution. These substances cause opalescence in the medium, but a very minute quantity of acetic acid clears it again.

Lay out the dissection on wax, in a suitable glass vessel and fill up with jelly rendered fluid by gentle heat. When the vessel is full, allow the jelly to cool and set, then pour a little more on the top. After this also has set, lay the glass cover (warmed by immersion in hot water) in its place. As the superficial layer of jelly melts, press the cover down. When cold, cement the edges with strips of cloth smeared with coaguline.

The vessel for mounting may be of almost any size and shape. I have tried glass jars, built up glass cells, ebonite, gutta percha, earthenware, and wood soaked in paraffin. Some of the writer's preparations have lasted five months without alteration. Previous immersion in alcohol, or other preservatives, does not prevent remounting in glycerin jelly. He has not as yet succeeded with large objects, but mountings with as much as a pint of jelly have done well.

The cost of the jelly is not prohibitive, and when the freedom from loss by evaporation, or spoiling by turbidity and discoloration is considered, this mode of preparation will be found cheapest in the end. Harvey and Reynolds, of Leeds, undertake to supply the undiluted jelly at a moderate price.

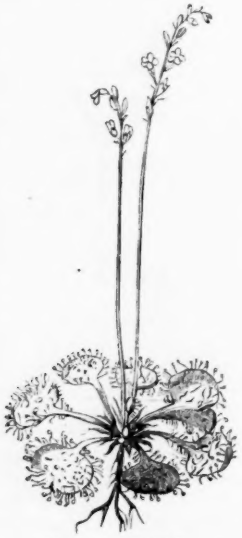
A Death from Chloroform.

A case of death from inhalation of three drachms of chloroform is reported (*Am. Med. Bi-Weekly*) by J. G. Brooks, of Paducah, Ky., in the case of a young man operated on for iridectomy, and who had the day before inhaled two drachms without harm. It is to be noted, however, that the patient was not unconscious of pain at the commencement of the operation, which probably lasted five minutes. The sudden stoppage of the heart's action and two or three gasping inhalations, so generally observed, were here noticed, and death took place in spite of all efforts at resuscitation.

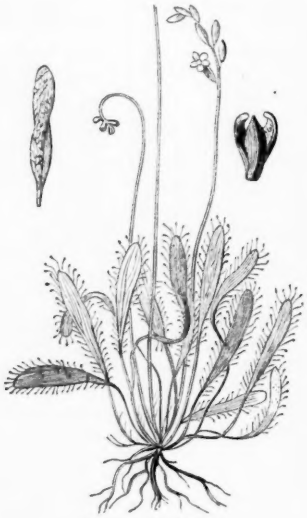
So many cases of death following the use of chloroform, when the administration has not been carried to complete analgesia, have now been recorded, that surgeons who use this agent at all should be careful not to commence an operation until this stage has been passed.

Medicinal Value of the Droseras.

THERE are something over a hundred varieties of the Drosera in existence, Australia, so it is said, having the greatest number. They flourish best in moist, shaded, boggy ground and blossom in July and August. They are all possessed in greater or lesser degree of the peculiar properties of so-called sensitive plants. They are called by various names, such as Sun-dew, Rosola, Roselle, Herbe aux gouteaux, etc.; their distinguishing feature being the long shining red hairs which beset the surfaces of the leaves and have upon their extremities drops of a glutinous shining fluid secreted by minute glands, and appearing most abundantly when the sun is



Drosera rotundifolia.



Drosera longifolia.

brightest. The *Drosera rotundifolia* and one or two other varieties are known to have been employed in medicine as long ago as the 16th century, when it was given as a remedy for phthisis. Even then Dodorus, of Belgium, remarked that it was too acrid, drying, and hot in its nature to be serviceable, and it has altogether been but little used. Among homœopathic practitioners, however, it has been noted that in pathogenetic doses it would cause a spasmodic cough resembling that of pertussis, and it has therefore been resorted to in cases characterized by purely spasmodic cough from any source. Hughes reports numerous cases of whooping-cough rapidly cured by the use of the third, twelfth, and even the thirtieth dilutions. The experience of Dr. Eugene Curie, of Paris, is cited by Hughes and is also referred to by M. Vigier in the *Bulletin Thérapeutique*.

Through Dr. Curie, M. Vigier obtained in 1863, from an herbalist in the Vosges, a large quantity of the herb which reached him in a fresh state, twice a week, and cost 10 francs per kilogramme. It was immediately bruised and placed in an equal weight of alcohol of 90 per cent. After macerating for a month, the mixture was expressed and filtered. Thus was obtained an *alcoolature* (weaker in alcoholic strength than a tincture) of Drosera of which the density was 56° Centigrade.

This was capable of indefinite preservation, contained all the medicinal principles of the plant, had a dark-brown color and a characteristic odor. When this *alcoolature* was distilled, there remained an extract of slight consistency, easy of administration and therapeutically active. With this extract, M. Vigier prepared pills having the following formula: Extract of Drosera, 5 grammes; Powd. licorice root, q. s. To be made into 100 pills.

Several years later, M. Vigier had a quantity of Drosera collected in the forest of Saint Léger by several inhabitants of the neighborhood, who gathered only *D. longifolia*. The collection of Drosera in this region was slow and difficult, and it reached him in agglutinated masses, containing also the damp earth and mosses upon which the Drosera always rests, giving it the appearance of being a parasite. In this condition it served only to make an extract which proved, however, to possess the same properties as *D. rotundifolia*. M. Vigier found the remedy too expensive for patients who are obliged to pay a fair price for it, and succeeded, at length, in reducing the cost of the crude drug to 5 francs per kilogramme at the very lowest, and finds that it requires 7 kilogrammes of fresh Drosera to make 1 kilogramme

when dried, which brings the cost of the dried product to 35 francs per kilogramme; 40 to 50 francs he considers to be a fair retail price, and this, owing to the rarity of the plant, would be increased by any considerable demand. An attempt by M. Vigier to cultivate Droseras had failed.

The dried plant, when treated with alcohol of 60° strength, gives a quarter of its weight of extract. He gives also certain formulas which he has established: 1 kilogramme of fresh Drosera and a like weight of 90-per-cent alcohol gives 1500 grammes of *alcoolature*, containing therefore, the extractive matters of 666 grammes of the Drosera; 1 kilogramme of *alcoolature*, when distilled, gives 25 grammes of extract; 1 kilogramme of fresh Drosera gives 143 grammes of dry product; 100 grammes of dry Drosera gives 25 grammes of hydro-alcoholic extract, as 1 kilogramme of *alcoolature*.

He recommends that 100 grammes of Drosera and 1 kilogramme of 60° alcohol be macerated 15 days, then expressed and filtered.

According to M. Vigier, the trials of the drug by Dr. Curie in phthisis seemed to show very favorable results, but upon further analysis of the cases, he was disposed to think that those presenting symptoms of bronchitis were most favorably influenced.

[See page 276 for account of the carniverous properties of the *D. rotundifolia*.]

Tests for the Purity of Quinidia Sulphate.

REFERRING to some methods of examining the purity of quinidia sulphate lately published by De Vrij (see our May number, p. 148) and Petit, Otto Hesse points out certain errors of the processes which vitiate the results. De Vrij's method is a modification of his own, but this very modification is the cause of the fallacy of the test. Hesse directs the process to be performed as follows:

Heat 0.5 grammes (1 part) of the sulphate with 10 cc. (20 parts) of water to about 60° C.; add to this 0.5 grammes (1 part) of pure potassium iodide, stir well, let cool, and, after the lapse of an hour, filter the liquid off from the precipitate. If no other cinchona-alkaloids were present, the filtrate remains perfectly clear on addition of a drop of solution of ammonia; otherwise, a precipitate will take place.

Hesse further points out the following characteristics of quinidia sulphate:

1. Its composition is $2C_{20}H_{24}N_2O_2.H_2SO_4 + 2H_2O$. The water of crystallization can only be removed by heating the salt for some time to 120° C.
2. In addition to the above-mentioned test, which only proves the absence of other cinchona-alkaloids, the salt should be proven to be free from ammoniacal or other inorganic salts, by the following reaction:

   Treat 1 gramme of the salt with 7 cc. of a mixture of 2 volumes of chloroform and 1 vol. of 97 per cent alcohol. A clear solution will result, if the salt was pure.—*Ber. d. Deutsch. Chem. Ges.*, 1878, 1162.

Filtering Papers.

THE white, unsized filtering papers are classed as Swedish, Rhenish, English, and Scotch. Sweden has obtained a reputation for the superior quality of its filtering papers, which are composed of flax fibre, the fibres being very much crushed and broken. The Rhenish is a flax paper, more fibrous in its structure, and consequently less dense than the Swedish. This is due to the fibres being less broken and crushed. The English white filtering papers have a little cotton mixed with the flax, and the fibres are very much crushed and torn. Thus these papers differ more in their physical characters than in their composition. The foreign gray filtering papers are of more composite character, having a considerable quantity of wool in their composition—said to be used to render the paper absorbent. It is extremely difficult to recognize the nature of the fibres used in these papers, owing to their crushed and torn condition. A flax fibre, when crushed, resembles that of cotton, and it requires to be traced further to establish its identity. The Japanese also make a filtering paper from the liber tissue of the mulberry, which has very coarse meshes, and seems only adapted for use as a sieve.

Besides the features referred to as characteristic of the Swedish papers, their freedom from inorganic materials is by no means the least recommendation of the best grades, and leads to their adoption in all processes where qualitative analysis is involved.

Strychnia-Poisoning.

J. W. HOLLAND, M.D., reports in the *Louisville Med. News* a case of strychnia-poisoning, in which the subject took five grains in four ounces of whiskey; had clonic spasms of muscles generally, loss of volitional power over limbs, and pulse of 120. A mustard emetic emptied the stomach, and he was given bromide of potassium and chloral, was liberally chloroformed, and ultimately recovered.

Honey in the Manufacture of Sparkling Wines.

IT has been customary to add a certain proportion of rock-candy to the wines which are to become effervescent, in order to increase the material to be converted by fermentation into carbonic acid. Of late, however, a Rheims champagne-grower has resorted to the use of honey for this purpose. Former attempts are said to have failed, owing to the "waxy" taste imparted to the product, but this, it is claimed, has now been overcome, and the honey proves to be superior to the very best white sugar for this purpose.

COMMERCIAL PRODUCTS OF THE CITRUS FAMILS.

BY CHARLES RICE.

[Continued from page 233.]

II. THE SWEET ORANGE.

Citrus Aurantium Risso (*C. Aurantium* var. *β dulcis* L. *C. dulcis* Lk.) *Habitat:* Northern India and South. China. Cultivated in most warm climes. Brought by the Portuguese, about 1548, from South. China to Europe. The first tree stood long at Lisbon in the house of the Count of St. Laurent. Thence it went first to Rome, then extended along the Mediterranean, deep into Western Asia, and to other parts of the globe.

Engl.: Sweet orange-tree. Portugal orange-tree. *Fr.:* Oranger. *Germ.:* Apfelsinenbaum. Süsser Pomeranzenbaum. Orangenbaum. *Ital.:* Arancio dolce. Melarancio. *Span.:* Naranjo (dulce). *Port.:* Laranjeira de fructo doce.

The Leaves (18) have formerly been used, like the bitter, as a remedy in spasmodic diseases.

Lat.: Folia Aurantii dulcis. *Engl.:* Sweet orange leaves. *Fr.:* Feuilles d'oranger, etc.

They yield in part:

Essence de Petit Grain (19; see 2 and 11).

The Flowers (20). The dried flowers are used, in infusion, as a gentle nervous stimulant. The Chinese use the fresh flowers to scent certain varieties of teas.

Lat.: Aurantii flores (in the U. S., Br., and Germ. Ph., denote both the bitter and the sweet.)

Candied Orange Flowers (21) are prepared by depriving orange flowers of their cups, stamens, and pistils; mixing them with sugar in the proportion of two lbs. of the latter to four ounces of flowers, boiling them to a candy height, and pouring out on a slab to form a cake. Stomachic and antispasmodic.

Lat.: Flores Aurantii conditi.

Essential Oil (22). This is less fragrant than that obtained from the flowers of the bitter orange; and is used as a substitute or addition to oil of néroli.

The statement, which is often met with, that the Essence de Néroli Bigarade is prepared from the flowers of the bitter, and Essence de Néroli Pétale from those of the sweet orange, is not founded on fact; except, perhaps, in the case of the Essence de Néroli de Paris (see 7).

The Unripe Fruit (23) is used for the same purposes as unripe bitter oranges (see 9). The issue-peas of the shops are usually made of these berries.

The Ripe Fruit (24). Among the many varieties of sweet oranges, the following are esteemed as the best:

The *Chinese* or *Mandarin* orange, the fruit of the two varieties *Citrus Chinensis* and *Citrus myrtifolius*. This has a dark reddish-yellow peel, and a blood-red pulp. It was introduced in the first part of this century into Sicily and into Malta, and hence is often called *Maltese* orange. From there it has been transplanted to the Azores and other places. This kind of oranges are called *tangerines* at St. Michaels.

East Indian small clove oranges. The rind of this, together with a small quantity of the rind of the coarser "country" orange, is used for preparing a superior orange marmalade.

The "navel oranges" of *Bahia* are celebrated for their extraordinary fine flavor.

Sicily oranges, exported from Messina and Palermo.

Spanish oranges, from Sevilla, Valencia, and the Island of Majorca.

Portugal oranges, the best of which come from St. Michaels in the Azores.

Italian oranges, from Calabria (Reggio), Naples, Sorrento, and Genoa.

French oranges from the Provence; those of the smallest size are called *mignonettes*.

West Indian and *Florida* oranges. The Havana and St. Augustine are considered the best.

The *Cape of Good Hope* produces very fine oranges, and the trees have attained there a very large size.

Lat.: Fructus Aurantii dulcis. *Engl.:* Sweet, or Portugal,[8] or China orange. *Fr.:* Orange (douce). *Germ.:* Apfelsine. Süsse Pomeranze. Orange. Sinaapfel. *Ital.:* Arancia (dolce). Melarancia. Poma de Sino. *Span.:* Naranja (de la China). *Port.:* Laranja doce, *or* da China.

The Peel (24) of the ripe fruit has a golden yellow or orange-yellow color externally, a thinner, less spongy white layer internally, and a peculiar *faintly* bitter taste. (On the *Commercial Peel* see above, pg. 233.

Lat.: Cortex Aurantii dulcis. *Germ.:* Apfelsinenschalen, etc.

Candied Orange Peel (25) is made like candied bitter orange peel (see 15).

Lat.: Cortex Aurantii (*or* Aurantiorum) conditus.

The Juice (26) of the ripe fruit is a grateful beverage. Mixed with common salt it is used as a purge in the West Indies.

Essence de Portugal (27) is the essential oil obtained from the rind of the scarely ripe fruit by mechanical means, either by the sponge or écuelle process.

Engl.: Oil of Portugal. *Germ.:* Süsse Pomeranzen-(schalen)essenz.

The commercial oil is often a mixture of various oils of different origin, from the Citrus family.

Essence de Mandarine (28), a very finely-flavored yellowish oil, is obtained, by expression, from the rind of the Mandarine or Maltese orange. It is, however, very rarely to be obtained in the market.

III. THE LEMON.

Citrus Limonum Risso (*C. medica* var. *β* L.). *Habitat.:* Northern India: Valleys of Kumaon

[8] From the Portuguese, who first brought the fruit to Europe, it soon acquired the name *portogallo* (Italian), *πορτογαλεά* (Med.-Greek), *protokale* (Albanian), and even Kurdish *portoghal*.

and Sikkim. Brought to Palestine and Egypt by the Arabs about the tenth century. The tree flowers and bears fruit all the year round. Three harvests are generally obtained; the best in the middle of May; in other localities from July to September. *Cultivated* along the Mediterranean coast (South. France, Italy, Greek islands, North. Africa), in Spain, Portugal, South. and West. Asia, the West Indies, Brazil, etc.

Engl.: Lemon-tree[9]. *Fr.:* Limonier. Citre-Limonier. *Germ.:* Citronenbaum (incorrectly but commonly so called. Less usually: Limonenbaum). *Ital.:* Limone. *Span.:* Limonero. *Port.:* Limoeiro.

The Bark of the Root (29) has been used in the West Indies as a febrifuge.

The Fruit (30). This is usually gathered before fully ripe. The best comes from Messina in Sicily; from the Riviera of Genoa,[10] chiefly about St. Remo; from Nizza and Mentone; also from the Garda Lake; from Malaga and Lisbon.

Lat.: Fructus Limonis. Limonia malus (acida). Limones (plur.). Citrea (plur.). *Engl.:* Lemon. *Fr.:* Citron (less correctly; better:) Limon. *Ital.:* Limone. *Span.:* Limon. *Germ.:* Citrone (incorrectly but commonly so called. Seldom:) Limone.

The Seeds (31) have been used as a vermifuge.

The Peel (32) of the fruit contains much essential oil. A good deal of the commercial lemon-peel is derived from Citrus medica. In pharmacy the rind of the *fresh* lemon should be used.

Lat.: Limonis cortex. Limonum cortex. Cortex (fructus) Citri. Pericarpium Citri. *Engl.:* Lemon-peel. *Fr.:* Ecorces *or* zestes de citrons (limons). *Germ.:* Citronenschale (Limonenschale), etc.

Candied Lemon Peel (33) is prepared like candied bitter orange peel (see 15). Used as a sweetmeat.

Lat.: Cortex Limonis conditus.

Juice of Fruit (34), or lemon-juice. For medical purposes this should be expressed from fresh lemons. The fruit is peeled, the seeds are removed (as they would make the product bitter and mucilaginous), the pulp is cut, mixed with clean chaff, and pressed in strong cloths. When the juice has cleared, it is filtered, filled into small bottles, which are loosely corked, and immersed for a while in boiling water. The cork is then inserted tightly, waxed over, and the bottles preserved in a cool place.

Concentrated Lemon Juice or *Lime Juice* (35) is exported for making citric acid. It is obtained promiscuously from the lemon, the lime, and the bergamot.

Essential Oil of Lemon. This is either produced by mechanical means, from rather green and unripe lemons, and such which it would not pay to export, owing to their small or irregular size

by the *sponge*-process, at Messina and Palermo in Sicily, and at Reggio in Calabria. This constitutes the *Essence de Citron à l'éponge* (36). Or,

by the *écuelle*-process, at Mentone and Nice (South. France). This constitutes the *Essence de Citron au zeste* (37).

Or else by distillation, for which the rind of damaged fruits, as well as the residue left from either of the above-mentioned manipulations are used. This is the *Essence de Citron distillée* (38).

Lat.: Oleum Limonis. Oleum Citri. Oleum de Cedro. *Engl.:* Oil of lemon. *Germ.:* Citronenessenz, etc. Most of the commercial oil contains *distilled* oil of lemon, or else oil of turpentine.

[To be continued.]

The Buffalo Lithia Springs.

THE editor of the *Medical Times* thus expresses himself regarding the value of the "Buffalo Lithia Spring-Water:"

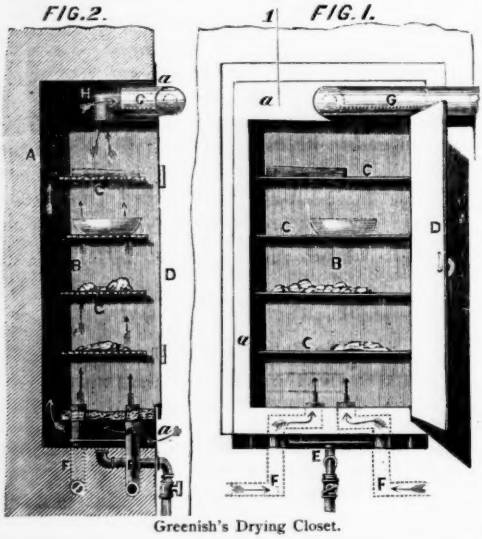
"The value of alkalies in disease has long been known, and the wide reputation of the springs of Vichy bears testimony to the value of the natural waters over the simple alkalies. Of late years, lithia has been asserted to have especial value in chronic gout, over and above that of other alkalies. Some considerable experience has indicated that this assertion is well founded; and several years since we looked for a native lithia water which should be cheap and efficient. The product of the Buffalo springs of Meklenburg County, Va., was finally brought to our notice by a Baltimore physician, who had been relieved, by its use, of some very troublesome and alarming symptoms, believed to be due to an inherited gouty diathesis. Trial in one or two cases of inveterate chronic gout has afforded much satisfaction to us; free diuresis being provoked, and followed by a relief of symptoms. It is too early to decide whether the water will assume the position of an achieved, substantial reputation, but certainly we are acquainted with no little-known spring that seems to come with so much of promise, and we trust that some of our readers will give a speedy and impartial trial, and report the results in our columns."

[9] *Lemon* is from the Arabic *limûn*, and this, by way of the Persian, is related to the Hindu *limu*, *limbu* or *nimbu*. *Adam* already in his *Hindî-Kosha* (Calcutta, 1829) translates the Sanskrit *nimbu* into Hindî *limu*. This translation is no doubt correct; but the Sanskrit has evidently coined or adopted the word from the North Indian vernaculars. In Cashmeer it is still called *nimbu*. There are many names in Sanskrit for the Citrus-fruits, a number of them standing for lemon. The *Madanavinoda* (see above, note 2) mentions two kinds of *nimbu* (or *nimbâka*), one of which is sour, and the other sweet. Another native term is *nisbu*, according to the *Sabdakalpadruma*. The Mediæval-Greek is λαιμάριον, λεμόνη. The lemon is first mentioned in the book on Nabathæan Agriculture under the name *hasîa* (see *Meyer, Gesch. d. Bot.*, III., 68).

[10] The strip of land around the Gulf of Genoa, from Spezzia (Italy) to Nizza or Nice (France).

A Drying Closet.

MR. T. EDWARD GREENISH, of England, furnishes the *Pharmaceutical Journal and Transactions* with the following illustration and description of a drying closet—one of the most useful appliances in a well-appointed pharmacy. It may indeed, he says, be considered an essential requisite, yet how very seldom does any such provision exist at all adequate to the requirements of the pharmacist. The one of which the annexed is a sketch most fully answers its intended purpose. It is scarely possible to conceive a more simple yet efficient apparatus, always ready for use, requiring little, if any, attention, and at the same time very economical as regards the source of heat.



Greenish's Drying Closet.

Fig. 1 is a front view of the drying closet, with the door open. Fig. 2 is a transverse vertical section of the same, taken in the line 1–2 of fig. 1.

A is a recess in the wall; B is the drying closet, made of thin sheet iron, and provided with wire shelves, C, and a door, D. This closet is made of such a size that, when fixed into the recess in the wall a space of about two inches is left at the back and sides, and also at the top; in fact, all around the closet, the space being covered in front by the flange *a a*, formed in the front of the closet. E is a gas-burner, supplied from the pipe *e*, and F F are two air-pipes, which enter the bottom of the closet B; these pipes draw their supply from the air *external* to the laboratory, and their upper ends are surrounded by a layer of sand, forming a sand-bath two inches deep. The gas being lighted, is supplied with air from the front, and the heated air, together with the products of combustion, pass round the closet through openings made for that purpose in the sides and back of the gas chamber, up the space between the closet and the wall to a pipe G, and thence to a chimney. The articles to be dried or evaporated are placed either upon the shelves in the closet or upon the sand-bath, at its bottom, according to the degree of heat that may be thought desirable. The air, which enters by the pipes F F, slightly warmed by the sand, will carry up any vapor therefrom to a pipe, H, at the top of the closet, and thence to the pipe G. In order to regulate the draught of air at the back and sides of the closet, and thereby to adjust the degree of heat, the pipe G is provided with a circular damper, and the gas chamber also has in front of it an arrangement for regulating the supply of air to the gas, thus preventing sudden fluctuations of temperature. By these means the heat of the closet may be adjusted to the greatest nicety.

It will be observed that the closet is heated by gas, which, as a source of heat for this purpose, possesses advantages over any other. It is always ready to hand, continuous, and can be regulated to any required temperature. The gas, being lighted, heats the sand-bath immediately over the jets; part of the heat, passing through the openings in either side and back of the gas chamber, fills the space all round between the closet and wall, and the products of combustion, escaping by the flue G into the chimney, cannot by any possibility come into contact with the contents of the closet. It is considered *essential* to a good drying closet that it should receive an ample and continuous supply of fresh air; that of the room where laboratory operations are conducted is not suited for this purpose, being at one time contaminated with noxious gases; at another, saturated with moisture from the evaporating pan, the still, or the condenser, and always more or less filled with the dust from ground or powdered drugs. The two air-tubes, F F, derive their supply from the atmosphere *outside* the building, and have no connection with the laboratory, so that, when the air-tight door of the closet is closed, its contents are perfectly protected from contamination whilst the drying process is in operation. These tubes pass through the gas chamber, from which they derive some heat, and as soon as they enter the sand bend at right angles, and for six inches or so traverse the hot sand; another bend upwards enables them to deliver their supply of air, fresh, and to a certain extent warmed in its passage through about ten inches of heated tube. The moisture from the material in the course of being dried is carried off by tube H, at the top of the closet; this tube enters the gas chimney, and is carried for some distance through its interior. By this arrangement, the heat of the chamber external to the closet, on its passage into the chimney, warms the interior tube, and thus contributes to the required draught. There are four movable shelves, each made of wire, in the form of a shallow dish, and

others of sheet iron, to take their place when desired. The temperature of each shelf differs; if, for instance, the one at the top be 82°, the second will be 85°; the third, 88; the lower one, 92°; whilst the sand-bath will show about 130° Fahr.

The closet may be maintained, with a very trifling variation, at the same temperature for any length of time, day and night, without requiring special attention, and the constant supply of fresh air, warmed as it enters, necessarily facilitates the drying process. Of course, extra heat can be applied, when the sand-bath, together with the different shelves, will show a relatively elevated temperature. Under ordinary circumstances, such as those enumerated above, the consumption of gas is hardly appreciable.

It can scarcely be necessary to advert to the varied uses of such a closet in connection with a laboratory. Where the principles on which successful percolation depends are thoroughly understood, the uniform condition of the powder to be operated on is fully recognized, and the pretty equal dryness of the several ingredients is almost essential to such a grinding as will suit a sieve of the required mesh. An extract a little softer than the pillular form may, at a very low temperature, be reduced to the required consistence.

Precipitates are rapidly dried. Ergot, so tough in the condition usually met with in commerce, is readily dried, and crisped for the mill, at only a summer temperature, and without detriment to its active constituents, whatever they may be. In fact, to pass in review its applicability, would require a detailed notice of the materia medica, and an allusion to most of the preparations of the Pharmacopœia.

In studying the development and progress of the yeast cell in beer, the definite and well-regulated temperature of the closet has been found very efficient, and lastly, but by no means its least important use, is in offering a ready and available source of heat for the drying and finishing of specimens of materia medica, illustrative of the use of the microscope in pharmacy.

The dimensions of the drying closet are thirty-one inches high, sixteen inches wide, and twelve and a half inches deep. It occupies a recess in the wall where once stood a cupboard. The size, therefore, was a matter of necessity. Yet, had it been one of choice, it could scarcely have been better suited to the daily requirements of a moderate pharmacy.

The Ginger Plant.

THE ginger plant has a reed-like stem, which generally reaches three or four feet in height, and is invested with the smooth sheaths of the leaves. The flowers are not produced on the leafy stems, but on short leafless stems, in spikes about the size of a man's thumb, and of whitish color, the lips streaked with purple. The root-stocks, which form the ginger of commerce, are from one-quarter to one-half inch thick, knotty, fibrous, and fleshy when fresh. The stem dies annually, while the root continues two years. The roots are dug up when about a year old, and in the West Indies usually in January and February, after the stems have withered. They are well washed, freed from dirt, and in some cases, especially with the better kinds, the outer coat of the root is stripped off, and thus arises the division of ginger into white, scraped or uncoated, and into black, unscraped or coated.

The varieties of ginger which enter into commerce are those of Jamaica, Cochin, Brazil and Africa. The first three are scraped gingers, the last is coated. Jamaica ginger is the sort most esteemed, and next to it the Cochin. In the West Indies ginger is propagated by division of the root; the smaller pieces or protuberances being set, each of them throws up two different stems, the leaf stalk and the flower stalk. The land having been well cleared and trenched, the ginger is planted about March or April. It rises to its height and flowers about September, and fades again toward the end of the year. When the stalks are wholly withered, the root is thought to be full grown and fit to dry. The larger spreading roots are generally called "hands" or "races," and will occasionally weigh half a pound. In 1874 there were 185 acres under cultivation with ginger in Jamaica, and the average crop for many years may be taken at 1,000,000 to 1,500,000 pounds. Ginger is extensively grown in China, and largely used in its fresh state as a condiment and in medicine. Preserved ginger is prepared by securing the roots while they are yet tender and full of sap, putting them in jars and covering with syrup, which, after being changed several times, makes them ready for shipment.

In order to improve the color of ginger, and, according to some authorities, to protect it from the attacks of insects, it is frequently rubbed over with lime; in other cases, it is washed in chalk and water, when it is called whitewashed ginger. The surface of ginger is occasionally bleached by means of a solution of chloride of lime, and sometimes even by exposing it to the fumes of burning sulphur. Ginger, especially when ground, is frequently adulterated. Out of twenty-one samples of ginger submitted to careful examination, no less than fifteen were found to be adulterated with such substances as sago meal, tapioca, potato flour, wheat flour, ground rice, Cayenne pepper, mustard, and turmeric powder. These foreign substances occur in varying quantities, but in a majority of cases constitute the principal part of the article.—*Boston Cultivator.*

Modes of Administering Mercury in Syphilis.

In the final portion of an article by John Duncan, surgeon to the Royal Infirmary, Edinburgh, in the August number of the *Edinburgh Medical Journal*, regarding the modes of administering mercury in syphilis, we find the following practical conclusions.

"I think there can be no doubt that the majority of cases in private practice, when they require mercury, are best treated by the oral method. If small doses be given in the first place, and gradually increased in frequency till the desired effect be produced, the chances of gastric or intestinal irritation are easily avoided, and salivation can be prevented by the use of chlorate of potash, or alum-wash after each dose. The patient is thus permitted to follow his usual avocation, and the remedy may be continued, with proper precautions, as long as may be needful. With the other methods [inunction, fumigation, hypodermically, etc.] it is difficult, from their inconvenience, uncleanliness, or disagreeableness, to induce the patient to persevere sufficiently long; and one strong objection to the routine use either of mercurial fumigation, as practised by Mr. Lee, or inunction, as practised by Sigmund, lies in the necessity for confinement to the house, and even for a considerable portion of the day to the recumbent position. Exercise in open air, a nourishing dietary and even a certain amount of stimulation, especially in chronic cases, are of great importance, whatever be the way in which the mercury be given. Free action of the skin is very desirable and the occasional use of the vapor bath is a good method of securing it. In obstinate cases of skin affection, an occasional mercurial vapor bath may advantageously be added, and in hospital cases mercurial fumigation is probably the most efficient plan, at all events to begin with.

"I do not think that inunction and subcutaneous injection hold out sufficient inducement to employ them otherwise than as exceptional measures in cases of peculiar weakness or individual idiosyncrasy."

On Solution of Iodine in Oil of Bitter Almonds.

The want of a solution of iodine which shall not precipitate in the stomach, and especially of one which shall be easily miscible with oil, has been long felt. The French chemists, by a tedious process, made a solution in oil of sweet almonds; but it was liable to rancidity, while the large amount of the solvent necessary to be taken with each dose rendered it unacceptable.

The writer of this article, very early in his medical career, had his thoughts turned towards a more complete iodizing of cod-liver oil, thinking that the amount of iodine contained in this medicinal agent was too small to exert its full remedial power. Failing in his efforts to cause direct union, he gave up his attempt, but did not relinquish the idea.

Early in the year 1870, while engaged in pharmaceutical manipulations, he discovered the extreme solubility of iodine in the oil of bitter almonds. He was at that time ignorant of the reference in the United States Dispensatory* to Zeller, who speaks of this solubility as "slow and partial." His remark seems to have attracted no attention; yet the fact is a most valuable one, opening the way to many combinations of great importance to therapeutists.

On placing together powdered iodine and the oil of bitter almonds, the violet color of the former is immediately, and with great intensity, imparted to the latter; and if they are allowed to remain in contact for a rather long period,—two months or more,—they unite in the proportion of one of iodine to three of the oil. This solution mixes freely with oils, fats, glycerin, alcohol, ethers, and fluid extracts of vegetable matter, and is alone a most eligible concentrated preparation for application to parts where a thin fluid is liable to be swept away, as in the throat, the nares, vagina and uterus, and where, at best, only a small amount can be made to adhere. As the physiological rather than the chemical action is desirable in a topical application of iodine, this preparation merits acceptance, because it leaves the tissue soft and in good condition for absorption.

Formula for Iodized Oil of Bitter Almonds.†

℞ Pulveris iodinii, ℈ i.
Olei amygdalæ amaræ, ʒ i. [by weight.]
Mix, and shake occasionally for two months.

This may be combined with many other remedies for external application, to meet many different indications. If the purpose be to induce resolution of swollen glands, soap liniment may be chosen; if to produce counter-irritation or blistering, cantharidal collodion or croton oil would be suitable. For general external use, in which an emollient, unstaining, and less concentrated article is desirable, the iodized oil of almonds with glycerin fulfils all the indications, leaving the skin after its application supple and without stain. This is beyond comparison superior to "iodine paint," which corrugates the skin and hinders absorption; or to the greasy, uncleanly ointment.

Formula for Iodized Glycerin.

℞ Iodized oil of bitter almonds, ʒ i.‡
Glycerin, ʒ vij. [by weight.]—M.

This is a most elegant form for external use, and may, properly diluted, be administered internally, in doses of two minims, = about $\frac{1}{16}$ gr. of iodine and $\frac{1}{6}$ oil of bitter almonds.

The system is said to be best affected by iodine in minute doses and in exceedingly dilute form, as in the natural mineral waters, all excess

* Art. Ol. Amygd. Amar., p. 614 (14th ed.).
† Containing twenty-five per cent of iodine.
‡ = 15 gr. iodine.

of the remedy being carried off by the emunctories. To meet this view an iodized water may be made :

℞ Iodized glycerin, ʒ i.*
Water, O i.—M.

This contains about the amount of iodine found in four pints of the water of Iodine Spring, Saratoga,† and has about the strength of Lugol's iodine lotion.‡

A tablespoonful, containing about $\frac{1}{16}$ gr. of iodine and $\frac{1}{8}$ gr. of oil of bitter almonds, may be taken, diluted at pleasure, for a dose.

It is, however, to the iodizing more completely than it exists in nature of cod-liver oil, that the efforts of physicians and pharmacists have been bent,—all feeling that the therapeutic value of this remedy would be greatly enhanced by combination with a larger amount of iodine. The discovery of the solubility of the latter substance in oil of bitter almonds removes all the difficulty. We have only to add the iodized oil to the cod-liver oil, and, on agitation, complete and permanent union takes place. I may add, what is well known, that a proprietary article, claiming to be composed of cod-liver oil, iodine, bromine, and phosphorus, has been long before the public, and has received quasi-recognition in the United States Dispensatory, and the indorsement of many physicians. This compound is, however, vended at a very high price; its working formula is unknown to the writer and, he presumes, to the general pharmacist. The profession, therefore, may not be averse to a formula which may be filled by any physician or druggist. The following form I have used for several years in making

Iodized Cod-Liver Oil.

℞ Iodized oil of bitter almonds, gr. xvi.
Cod-liver oil, O i.

Mix, and shake. A teaspoonful, containing $\frac{1}{32}$ gr. of iodine and $\frac{1}{16}$ gr. of oil of bitter almonds, may be taken for a dose.

If thirty grains of the iodized oil of bitter almonds, two drachms of phosphorated cod-liver oil,§ and one grain of bromine, be used to the pint of cod-liver oil, the ingredients and proportions of Fougera ‖ will be had, plus twenty-four grains of oil of bitter almonds.

Very efficient combinations may be made by uniting the iodized almond-oil with alterative fluid extracts and potassic iodide :

℞ Pot. iodidi, ʒ ij.
Ol. amygdalæ iod., gr. iv.
Ext. stillingiæ fl., ʒ iij.
Syr. helianthemi, ʒ viiss.
M. Dose, cŏch. mag. ter in die.

I may add that I have not discovered the influence of bitter-almond oil as a factor in the various prescriptions used by me, except as a soothing remedy. I commend them with great confidence to the profession, believing they will meet with hearty acceptance and be greatly useful.—E. T. BLACKWELL, M.D., in the *Medical Times.*

* = 2 gr. iodine. † Analysis of Emmons.
‡ Art. Iodinium, U. S. D., p. 507.
§ U. S. D., p. 629. ‖ One per cent.

Oxide of Zinc Ointment as Remedy for Membranous Vaginitis.

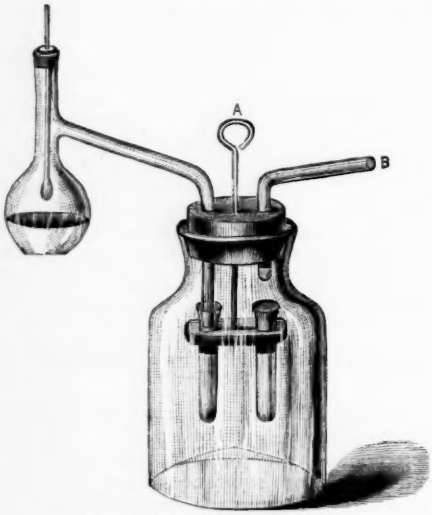
PROFESSOR T. PARVIN has had a case of diphtheritic vaginitis complicating vesico-vaginal fistula, which was rebellious to treatment in spite of thorough cleansing, mucilaginous injections, tannin and glycerin, sulphate of zinc, carbolic acid, nitrate of silver, and forcible removal of the membrane—twenty-four hours sufficed for its renewal. At last the vagina was tamponed with patent-lint smeared with oxide of zinc ointment and a cure of the vaginitis quickly followed.—*Amer. Practitioner.*

The Local Action of Medicinal Substances upon the Teeth.

AFTER a series of experiments continued over a considerable space of time, M. Maurel has determined the following facts in regard to the action of various substances upon the structure of teeth. Arsenious acid has no influence whatever upon either the enamel, cement, or dentine. Citric acid attacks and renders soft and friable all the dental structure. Tannic acid is without action on the enamel, but colors a light-brown both the dentine and cement, and renders the former softer. Phenol is without effect on the enamel; colors the cement brown, but its effect on dentine is not known. Vinaigre de Bully (a cosmetic) is without action on the dental structure. Common salt gives to dental structures a light-green tint; is without effect upon the hardness of cement, but, under certain circumstances, appears to soften the enamel. Its action on the dentine is not known. Chloride of zinc has no effect on the enamel; renders the cement transparent, but has little appreciable influence upon dentine. Chloride of antimony attacks the enamel in the most active manner, and the cement and dentine with nearly the same activity. Chloride of iron renders enamel brittle, softens the cement, and likewise, probably, dentine. Iodide of potassium is innocuous as regards enamel and cement, but probably softens dentine. The Liquor of Van Swieten, without softening the enamel, dulls its brilliancy, colors the cement a yellowish-orange without altering its consistency; its action on dentine is not known. Tincture of iodine causes enamel to disintegrate. The color which it imparts to the cement and the dentine are fugitive, and it is without effect on the consistence of the latter two structures.—*Bull. Gén. de Thérap.*

Apparatus for Fractional Distillation under Diminished Pressure.

In the apparatus suggested by Mr. E. J. Bevan in the *Chemical News*, for fractional distillation under diminished pressure, the method is quite simple and practicable. The rod A passes through the cork C, so as to form an air-



Apparatus for Fractional Distillation.

tight joint. By means of it, either of the tubes suspended in the cross-bar can be brought under the end of the condensing tube. The tube B is intended for the attachment of the suction tube of a Bunsen pump.

Morbid Craving for Morphia.

A work has recently appeared in Germany, by Dr. Edward Levinstein, Medical Director of a Maison de Santé in Berlin, in which the author gives a very interesting account of his personal observations in cases of morphia craving. A translation of the book has recently appeared from the publishing house of Smith, Elder & Co., in London, and is reviewed in the *Edinburgh Medical Journal;* from which we extract the following:

In most cases, the habit originates in the successful relief of physical pain; still, there is reason to fear, that not a few victims have been led to adopt it without so good a reason, and have gradually—in some cases sooner, in others later—become its abject slaves. The doses administered in this way seem almost incredible, both as to size and frequency. Six, eight, ten, twelve, sixteen grains are mentioned as no extraordinary allowance daily; and one case is narrated in which the patient, an officer in the army, injected himself thirty times in twenty-four hours. The question naturally arises: Would it not be easier for such a patient to swallow a corresponding quantity of the drug than to subject himself to so many operations, in themselves not without pain, and, when multiplied, likely to cause local irritation? Various reasons for preferring the injection may occur. Probably the true one is that the habit commenced with the treatment of a localized pain, and so was not unnaturally persevered in. Fashion, springing out of popular talk, may also be credited in some measure with the result.

The evil consequences arising from the abuse of injections generally begin to appear after a period of four to six months; but there are cases in which these are deferred for years. Many people afflicted with morbid craving for morphia feel quite well for a certain time whilst using the narcotic; no disturbances are felt, the appetite, and even the bodily weight remains unaltered, while others become emaciated. Soon, however, a series of morbid appearances show themselves, originating in the cerebro-spinal and sympathetic nervous system. The different organs are affected in various ways; some are not implicated at all; in others, one distinct symptom predominates over the rest to such an extent as to be the chief cause of the patient's complaints. The eyes are often devoid of lustre, the patient's glance is weak, miserable, and shy; after administering a new injection, however, they become animated, passionate, or enthusiastic. Double vision and a diminished power accommodation are not rarely met with. The pupils are generally contracted, frequently disproportionate, rarely enlarged.

The symptoms caused by abstinence from morphia are very dreadful and may be quoted. Only a few hours have passed since using the last injection of morphia, and already the feeling of comfort brought on by the action of the drug is passing off. The patient is overcome by a feeling of uneasiness and listlessness; the feeling of self-consciousness and self-possession is gone, and is replaced by extreme despondency; a slight cough gradually brings on dyspnœa, which is increased by want of sleep and by hallucinations. The vaso-motor system shows its weakness by abundant perspiration, by the dark color of the face, which replaces the pale condition apparent during the first few days. Flow of blood to the head and palpitation of the heart with a hard pulse soon show themselves. The latter symptom often disappears suddenly, and is replaced by a slow, irregular, thread-like pulse, which is the sign of the beginning of a severe collapse. The reflex irritability increases; the patients begin to sneeze, and have paroxysms of yawning; they start if any one approaches them; touching their skin causes cramping movements or convulsions; the trembling of the hands, if not already evident, now becomes distinctly perceptible. The power of speech is disordered; lisping and stammering take place. Diplopia and

disorders of the power of accommodation, frequently accompanied by increased secretion by the lachrymal glands, show themselves. The patients are overcome by a feeling of weakness and total want of energy, and are thus compelled to lie in bed. Neuralgic affections of various parts of the body, pain in the front and back of the head, cardialgia, abnormal sensations in the legs, associated with salivation, coryza, nausea, vomiting and diarrhœa, tend to bring them into a desperate condition. Some persons will bear up with fortitude under all these trials; they will quietly remain in bed and endure the unavoidable suffering, hardly uttering a complaint. Of the others, although the great minority of them sleep and doze during this trying time, some can find rest nowhere; they jump out of bed, run about the room in a state of fear, crying and shrieking. Gradually they become calmer, although, occasionally, their excitement increases. A state of frenzy, brought on by hallucinations and illusions of all the senses, at last causes a morbid condition to which I have given the name of *delirium tremens*, resulting from morbid craving for morphia, similar to that caused by alcohol. Some of the patients, however, will be found walking about in deep despair, hoping to find an opportunity of freeing themselves forever from their wretched condition.

It is noteworthy that the symptoms brought on by the abuse of morphia coincide strikingly with the pathological conditions for which the drug is therapeutically administered. Sleeplessness, hyperæsthesia, neuralgic complaints, mental anxiety, depression, and excitement are all combated as well as created by morphia. Let it be noted, also, that the principal symptoms showing themselves in people suffering from morbid craving for morphia, during the period of abstinence, are soon removed, for the time being, by the use of morphia.

Among other deleterious consequences of excessive use of morphia, impotence in the male, and amenorrhœa and sterility, or proneness to miscarry,* in the female, are generally met with. The urine is usually albuminous, and, in fatal cases, the presence of sugar indicates an affection of the medulla oblongata.

In the treatment of cases in which a morbid craving for morphia has become incontrollable, Levinstein, whose experience has been extensive, gives a decided preference to the sudden and complete deprivation of the drug to a slow and gradual deprivation.

As every one must see, great firmness and courage are required in the physician who undertakes such formidable cases. Sometimes there is real danger from *collapse;* although to ascertain its presence demands much attention and discrimination, as it may be simulated. When it threatens, Dr. Levinstein finds that a small quantity (half a grain) of morphia injected will usually avert the danger. If, in ten minutes, the pulse and general condition do not improve, the injection may be repeated once or twice, until the return of the normal condition is evident. "At the same time the patient is to be kept awake by counter-irritation, smelling salts, cold compresses on the head, dropping ether on the skull, by talking loud to him and shaking him; and stimulants, such as liquor ammoniæ, champagne, port-wine, brandy, hot coffee or tea with rum, are to be given internally."

"It is worth noticing that injections of morphia administered during the collapse do not prolong the time of the severe symptoms of abstinence."

A process is given—that of Professor Dragendorff—by which morphia is readily detected in the urine. This is important with reference to the following observations: "In cases of morbid craving for morphia, the evacuation is not very rapid, as the urine contains morphia for six or eight days after the commencement of the abstinence. A patient, whose urine contains morphia for a longer period than six or eight days, *is sure to be continuing the injections of morphia, although he may positively deny the fact.*" The same sad demoralization which is met with in drunkards exists in the slaves of morphia.

[* This is contrary to the observations of English physicians practising in China among opium-smokers.—ED. N. R.]

Preparation of Hydrobromic Acid.

DR. HERMAN HAGER proposes the following process for preparing a 10-per-cent solution of hydrobromic acid: 15.5 parts of potassium bromide are dissolved in 30 parts of distilled water; the solution is mixed with 38 parts of dilute sulphuric acid, spec. gr. 1115, the flask immersed into cold water, and finally 40 parts of 90 per cent alcohol are added. After standing for two hours in a cold place, or after cooling the flask with ice-cold water, the contents are filtered through a little glass-wool, and the residue in the funnel washed with 10 parts of 45 per cent alcohol. Having diluted the filtrate with 10 parts of distilled water, the whole liquid is introduced into a retort, or, if time is limited, into a tared porcelain capsule, and the alcohol either distilled, or, in the latter case, simply evaporated off, at a temperature between 60° and 80° C., until the remaining liquid weighs 100 parts. The evaporation in an open capsule must be conducted in an atmosphere free from ammonia. Should the liquid finally weigh less than 100 parts, enough distilled water must be added to restore this weight.

The alcohol, which is thus distilled or evaporated off, contains only insignificant traces of hydrobromic acid. In one experiment, where the distillate had been obtained at a temperature of 80° C., and where it amounted to 56 parts, only 0.03 parts of HBr could be detected.—*Pharm. Centralh.*, 1878, 265.

Some Observations on the Deep Injection of Morphia.

GEO. E. JONES, M.D., of Cincinnati, reports a case of disease in the region of the pyloric end of the duodenum, in which intense pain was present and demanded the use of morphia to relieve it. Commencing with half a grain subcutaneously, the morphia had to be increased in amount until, in the course of a few weeks, the daily dose was 30 grains; 15 in the morning, the balance in the evening. This was continued 21 consecutive days, and was then gradually lessened until 15 grains, and still later 1 grain sufficed. In the 20 months during which this occurred, nearly 9 ounces of sulphate of morphia were consumed, which required over 2,300 insertions of the syringe-needle; these injections being made in the abdomen and outer surface of the thighs.

As might be expected, accidental symptoms sometimes occurred, regarding which Dr. Jones says:—

"Did the needle enter an abdominal vein? Several times. The first time I became somewhat alarmed, the patient at once threw up her arms, complained of suffocation, giddiness, excessive fatigue and a severe tingling sensation following the course of the circulation. The countenance was at first livid, then flushed; the eyes became unusually brilliant; slight muscular twitchings, profuse sweatings with cold extremities, and in a few moments complete relaxation were followed by deep sleep which lasted only four hours, when she awakened, feeling, as she expressed it, 'ever so much better.'

"The same accident occurred three times, the symptoms much milder, with the exception of a burning sensation of both eyelids of either eye and both lips, which at one time became painfully intense. The above symptoms were produced by the injection of 5 grains of sulphate of morphia into an abdominal vein."

On two other occasions injections of two grains in the abdomen caused the patient to put both hands to her head, and cry out with the excruciating agony in the nature of a sharp pain which darted through her head, and lasted ten or fifteen minutes; she also complained for a time of intense itching of the nose and lips.

"Did the hypodermic injections cause the productions of any abscesses? Never met with any trouble of the kind, which I think was owing to the fact that *I made deep injections with warm, concentrated solutions of morphia*, that were freshly prepared every other day. Not only in this case, but in all others, am I in the habit of using the injecting-fluid warm, but I am also careful to make the injections deep. Under the circumstances, as I have met with success, I think the above is the proper method.

"Are there any ill-effects produced by continued use of morphia when hypodermically administered? In conversation of Prof. Bartholow, a few days past, I found him fully able from his great experience to answer this question: 'If morphia be gradually diminished in a careful manner, very little trouble, if any, need be anticipated: if withdrawn suddenly grave symptoms—even collapse may follow.' My own experience, as far as it goes, agrees with the above. I have never met with any ill effect in any case when I have continued the use of morphia hypodermically for any length of time and gradually withdrawing it; especially so in the case mentioned in this paper, when such a large quantity had been used.

"Neither have I met with the same amount of nausea or trouble with the kidneys as when morphia has been given internally; at the same time medicine and food can be given with a fair assurance that they will not be interferred with. In conclusion, I would offer the following aphorisms:

"Injections directly under the skin are, as a general rule, painful, and are liable to produce abscesses.

"Deep injections are not painful and are not so liable to produce abscesses.

"The injecting fluid must be at least of the same temperature as that of the body.

"Morphia hypodermically is always more positive in its action, and more equally distributed throughout the system, than when taken in the stomach.

"One-eighth of a grain of morphia hypodermically, is, as a general rule, equal to one-half to three-quarters of a grain internally."—*Cin. Lancet and Clinic.*

On the Treatment of Eczema Rubrum by means of Glycerole of the Subacetate of Lead.

L. A. DUHRING and A. VAN HARLINGEN send to the *Medical Times* a communication which contains the results obtained from the use of the glycerole in dispensary practice during six months. The formula used was that advised by Mr. Balmanno Squire, of London, and was composed as follows:

Acetate of lead.....	5 parts.
Litharge.....	3½ parts.
Glycerin.....	20 parts by weight.

Mix and expose for some time to a temperature of 350° F. Filter through a hot-water funnel. The clear, viscid fluid which results contains 120 grains of the subacetate of lead to the ounce, and is used as the stock from which preparations of various degrees of strength are afterwards made by diluting it with glycerin.

The majority of the cases noted were those of eczema rubrum. The conclusions at which the authors arrived were that:—"In the glycerole we have a valuable addition to the therapeutics of certain forms of chronic eczema, particularly E. rubrum of the lower extremities. It is most useful in those cases where the affection is

extensive, of a dusky hue, accompanied by much weeping, oozing, and infiltration of the skin, together with swelling and œdema of the subcutaneous tissues and a full and varicose condition of the venous circulation. In such cases glycerole of the subacetate of lead, used with diligence, and followed by careful bandaging, constitutes a remedy of the highest value. The remedy has, however, no antipruritic qualities, excepting in so far as it may reduce the œdema which sometimes appears to give rise to pruritus. Nor has it any resolvent effect upon infiltration of the more superficial layers of the integument. In this respect it fails just in those cases, and at that stage of E. rubrum where the skin is no longer acutely inflamed, but is thickened, indurated, and pruriginous; in other words, where ordinarily the preparations of tar and potash are most useful.

The glycerole fails, moreover, to exert a favorable influence in those cases of E. rubrum where the disease shows itself in numerous variously-sized superficial patches, and when the deeper layers of the skin do not appear to be affected.

With regard to its effect in the vesicular and scaly varieties of eczema, this is not satifactory, and it is less favorable in proportion as the case departs from the typical form of E. rubrum.

Occasionally the glycerole is found to disagree with the skin. This, however, does not often happen, at least not nearly so often as in the case of glycerin.—*Medical Times.*

Chloral in Dysentery.

W. L. NEWELL says that a weak solution of chloral manifested such favorable action on chronic ulcers that he thought of using it also locally on the inflamed and congested bowel in dysentery. Together with other remedies, he therefore tried it in the case of a child of eleven, who suffered with thirst, pain, tenesmus, and had twenty-five to thirty dejections in twenty-four hours. 5 gr. of chloral hydrate in ℥ ij. of starch gruel were thrown up the bowel, with considerable force, from a hard-rubber syringe. It remained three hours, during which the child slept. Many of the other symptoms were modified, and the injection was repeated, remaining seven hours, and then came away with some fœcal matter, but without tenesmus. Four enemas were given, in all, and treatment was discontinued in forty-eight hours.

Another physician, to whom he told his experience, also tried it in the case of a lady, aged twenty-five, using ten grains instead of five, and secured complete repose for eight hours, although she had previously had twenty to thirty movements in twenty-four consecutive hours. In conclusion, he says: "The number of aggravated cases of dysentery we have treated with chloral hydrate warrants us in the assertion that, if early and promptly used, it is *almost* a specific."—*Medical Times.*

Sophistication of Cod-Liver Oil.

THE extent to which oil from the liver of the *Gadus Morrhua* has come into medicinal use has led to its sophistication to a very great extent. In this country, not only are the livers of other varieties of cod used as a source of supply, but oil is largely derived, it is said, from the entire *menhaden*, a small fish frequenting the bays and estuaries of our northern coast. It has been commonly thought that, by using Norwegian oil, the risk of adulteration would be considerably lessened, but recent reports from North Germany state that in Norway it has become quite common to use the liver of a large fish caught on the coast, which yields oil in large quantity; between two and three hundred pounds being sometimes extracted from a single liver. The oil from the latter source is of light color, remarkably bright in appearance, and quite free from unpleasant odor.

In vol. II. of NEW REMEDIES (p. 415) we quoted from the *British Med. Jour.* a statement that, in Queensland, dugong oil had been found equally efficacious and far pleasanter to take than cod-liver oil.

It is quite probable that other liver oils than that of *Gadus Morrhua* have equally medicinal properties, but whether the presence of bile-elements is essential has not yet been determined; and in view of the fact above stated, that oil from the entire menhaden is reported to be largely used under the name of cod-liver oil, it would be worth the experiment if some of our physicians who have a hospital service would try an authenticated sample and note its effects.

Sulphate of Manganese as a Substitute for Calomel.

DR. GOOLDEN makes use of ten to twenty grain doses of sulphate of manganese as a substitute for mercurial preparations in hepatic derangements, and in smaller doses (five grains), as an adjuvant to iron for anæmic persons who cannot ordinarily take the latter without discomfort. Ten grains is usually quite sufficient, and more than thirty grains is the most that can be required. Its taste is like the sulphate of magnesium, but considerably less bitter. Neither griping, depression, nor disturbance of the heart's action attend its purgative effect, and a tendency of the larger doses to cause nausea may be counteracted by giving, at the same time, a small quantity of Epsom salt. It is best given in water containing a little citrate of magnesium.

Asclepias Syriaca as a Remedy in Dropsy and Scrofulus Affections.

OF three varieties of *Asclepias* mentioned in the U. S. Pharmacopœia, J. P. Thomas, of Pembroke, Ky., has used two, viz.: *A. incarnata* and *A. Syriaca* in the treatment of strumous affections; his attention having been called to the value of the latter by his brother, who is quoted as an authority regarding its value, in the U. S. Dis-

pensatory (14th ed., p. 155). He has also found it of value in dropsy without reference to the nature of the cause, but especially is it serviceable with engorgement of the liver; being in many cases superior to either calomel, leptandrin, or podophyllin. In no case, when used in doses which come short in effect of causing vomiting, does this remedy fail to cause profuse diaphoresis and remove dropsical accumulations.

In scrofulous affections he uses it with *Phytolacca decandra*, aided, when needed, with malt-extract and cod-liver oil. He employs the following formula:

℞ Strong decoction of Asclepias Syriaca ..... ℥ xij.
Decoction of Phytolacca decandra ..... iv.
Whisky ..... vi.
White sugar ..... ℥ iv.

M. From one-half teaspoonful to two tablespoonfuls thrice daily, according to age of patient and effect produced.

He uses the above formula as a vehicle for salts of iodine or arsenic when required.

A tincture made by macerating for fourteen days two ounces of the fresh root, thinly sliced, is the most convenient form for use as a simple cathartic or alterative and laxative. The infusion is to be preferred when diaphoresis is desired.

Not the least antimalarial or antiperiodic power has been discovered by Dr. Thomas to reside in the remedy.—*Louisville Med. News.*

Nitrate of Silver in Chronic Cystitis.

CHARLES W. MILES, M.D., of Jordan, Ky., has used the nitrate of silver in solution as an injection in five cases of chronic cystitis, with most satisfactory result. He begins with a solution of two or three grains to the ounce, and increases the strength as the bladder becomes tolerant, the injection being made at intervals of two to three days. He does not resort to the preliminary measure of washing out the bladder [wherein he makes a mistake], but injects the solution after the patient has voided his urine through the catheter [and thereby fails to reach all the folds of mucous membrane]. None of his cases required stronger than twenty-five-grain solutions and most of them yielded to one of ten-grain strength. He uses a silver catheter and metallic syringe; uses a hot hip-bath to relieve severe pain following the injection, or, if it is very acute, he injects olive oil. In connection with this treatment, Dr. Miles employs a mixture containing chlorate, bicarbonate, and iodide of potassium with syrup of buchu, together with mucilaginous drinks.

[Drs. Keyes and Van Buren insist upon the necessity for first washing the interior of the bladder to remove pus, phosphatic deposits, and mucus, which would certainly interfere with the usefulness of nitrate of silver solutions; and, then, whatever may be used as an injection, should be of the temperature of the body, and of sufficient quantity to moderately distend the bladder. By the latter means all folds and crypts are removed, and the surgeon may be *sure* that he has applied his remedy to the seat of disease. Their course seems, to say the least, the more rational of the two.]

Mineral Waters in Paris.

THE fabrication of syphon waters is carried on very extensively in Paris, as well as throughout France, and they are sold wonderfully cheap. The retail price is generally four sous. Several of the leading establishments have a very extensive plant; one of them is said to own as many as two million syphons. Their produce is not always beyond criticism, sufficient care not being taken to use perfectly pure water; but the refreshing qualities of *vin rouge* and *eau de seltz* are such in hot weather as to make the enormous demand indicated above. Inferior wines, hardly classable as *vin ordinaire*, are freely run off in the lower grades of *débits* as soon as the *eau de seltz* fever sets in.

The St. Galmier natural mineral water is in great vogue, as it does not decompose the wine when mixed with it, as many other natural waters do, and also on account of its cheapness; it being retailed at seven sous the bottle, containing a litre. The addition of St. Galmier to red wine is said to form a very agreeable mixture, and the annual consumption has been stated to be as much as ten million bottles.

The territory of France is prolifically endowed with mineral springs, but only a certain number of them are adapted for daily use, the remainder being highly medicated. The French medical profession are much given to advising the use of these waters, and the list which has received their sanction is a long one, leading off with the famous Vichy, which is said to sell to the amount of four or five million bottles annually.

A Case of Chloroform Poisoning.

PROFESSOR J. A. LARABEE, of Louisville, reports in the *Medical News* a case of chloroform poisoning, treated by him in a manner which calls for commendation. The amount taken was afterwards learned to have been an ounce, and it was between four and five hours before he saw her. Attempts at emesis had brought up only strong fumes of the drug. She had likewise been treated with an electrical current through the pneumogastric and diaphragm, but was rapidly sinking. One-tenth of a grain of digitaline hypodermically restored some strength to the heart's action, and was repeated at an interval of an hour and a half. Still later, in order to stimulate respiratory movements, one-tenth of a grain of atropia was administered in a similar manner. Four hours after Dr. Larabee first saw the patient, both pulse and respiration had recovered their tone. Convalescence occurred rapidly and was unaccompanied with either gastric or œsophageal inflammation.

RECENT PAPERS.

Pharmaceutical Journal and Transactions. July.

The Paris Exhibition.—The account here given of the features of the exhibition which chiefly concern physicians and pharmacists is quite as good as any that has yet come to our notice, and we will therefore make use of it so far as it will interest readers in this country. As it is usually the case, there is a lack of such a descriptive catalogue as should accompany any exhibition of this nature, in order that it may serve to any extent as a public educator, and the writer notes that in the French, Chinese, and Japanese sections, especially, the commercial character of the exhibition is quite pronounced.

The classification adopted is the division of the whole class of the exhibits into nine groups, and these are again subdivided into ninety classes. In group II., "Education and Instruction: Apparatus and Processes of the Liberal Arts," are to be found apparatus used in teaching chemistry and illustrations of the diagrams, apparatus, and specimens used in the French medical and pharmaceutical schools. This will be perhaps the best opportunity of mentioning that in France there are four medical faculties,—at Paris, Nancy, Lille, and Lyons,—each of which has its chair of of medical chemistry and pharmacy. Of pharmaceutical schools of the first rank, under the control of the state, there are three: one in Paris, endowed with nine professional chairs; and two others at Montpelier and Nancy, each having five chairs. Medical and pharmaceutical teaching is also carried on in "*écoles de plein service*" and "*écoles préparatoires*," of which secondary establishments there are twenty. These have, however, only authority to confer the grades of "officer of health" and "pharmacien of the second class," which only enables a pharmacist to carry on business in one Department, to be selected at the time of examination, whilst the "pharmacien of the first class" can exercise his profession in any part of the country. During the year 1877 the three superior schools received 97 pharmaciens of the first class and 352 of the second.

Class 15.—"Instruments of Precision," includes Chemical and Physical Apparatus. The title of the third group is "Furniture and Accessories," which through the connecting link of mirrors and stained glass is made to include the exhibits of the bottle manufacturers; it is also stretched to cover the class of Perfumery, of which it is still less suggestive. Group IV., "Textile Fabrics, Clothing and Accessories," may be passed over as containing nothing specially interesting to pharmacists; but with respect to Group V., "Mining Industries; Raw and Manufactured Products," the case is different. Here are met with illustrations of the mineral and metal industries; products of the cultivation of forests, such as cork, charcoal, barks for tanning, resins, turpentines, etc.; products of the chase and fishery, which include sponges but not fish oils; a class described as "non-alimentary agricultural products," among which may be found in the French court some admirable exhibits of the Association of Herbalists, and also, curiously enough, olive oil, honey and hops, though this classification of the last article doubtless accords with a widespread opinion; and lastly, the most important class of "Chemical and Pharmaceutical Products." In Group VI., "Apparatus and Processes used in the Mechanical Manufactures," there is a class for "Apparatus used in Chemistry, Pharmacy and Tanning," which, however, rather belies the promise of its name.

As before mentioned, the greatest amount of interest to the readers of this Journal will be found in Class 47, Group V., "Chemical and Pharmaceutical Products," and to it, therefore, a few lines may be devoted in this preliminary sketch. The catalogue of French exhibitors in this class contains about 450 names, but the connection of a large proportion of them with pharmacy is rather remote. Nevertheless, though soaps, candles, varnishes, glues, pigments, india-rubber and gutta-percha goods, inks, machine oils, harness polish and blacking might be expected to give the department the appearance of a medley, still there are probably at least one hundred exhibits by pharmacists, and the strictly chemical and pharmaceutical elements are sufficiently predominant by their number and excellence to preserve its titular character. Next to France in point of numbers comes Spain, with 126 exhibitors, followed by Great Britain and Ireland and Austria, each with 90, Russia with 51, Algeria with 45, the United States with 43, and Norway with 28, etc. These figures are quoted simply as indicating the relative numbers of the exhibits from different countries in this the specially chemical and pharmaceutical section, but they must not be presumed to represent their relative importance in respect to those subjects.

The arrangement of the exhibits in the French department differs very much from that in the other departments. The native exhibitors appear to have been under somewhat strict control as to the style and size of the cases, whilst, on the other hand, the foreign exhibitors appear to have been allowed to carry out their own ideas, without much other limitation than might be suggested by monetary considerations. The result has been on the whole of advantage to the latter, who have produced many really handsome cases, some of the best of which are to be seen in the British court. The liberty has, however, been purchased at the cost of considerable disproportion and want of uniformity; for instance, the structure of Messrs. Tilden, of New York, who, in one sense, may be credited with the greatest pharmaceutical show in the whole building, would probably still admit, in addition, the goods from any half a dozen pharmaceutical cases in the French section.

Nothing is more remarkable in the exhibition than the great wealth of raw materials, brought forward by the British, French, and other colonies, while, on the other hand, the old countries show evidence of great progress in the manufactures.

In Class 44 are numerous exhibits of cork, both raw and manufactured. The Société Anonyme des Liéges de l'Edough shows an instructive series of sections of trees of various ages, demonstrating the thickness of the layers of cork at the different stages of growth. The various applications of cork, such as covers for glass stoppers, and cork dust made into a coating for bottles or steam pipes, are well represented by several firms. The manufacture of corks in France is stated to occupy the population of about forty parishes. Formerly a workman could only make 1,200 to 1,500 corks a day, but since the introduction of machines, 4,000 to 6,000 can be produced, according to the size required. The cork trade appears to be increasing considerably in France, the importations of the bark having risen during the last twenty years from 257,000 francs to 2,940,000 francs. The bark collected during the first twelve or fifteen years of the growth of the cork tree is used for life buoys and ornamental gardening, or burned in close vessels to form Spanish-black; the superior kind used for corks being obtained from the sixteenth to the twenty-sixth year of its age, during which period it is softer and of finer grain. In the left annex may be seen cork-cutting machines in action, and in the Algerian house, near the Trocadero, the advantages and disadvantages of hand and machine cutting may be compared together, a native man being employed there constantly to cut them by hand, while a woman cuts them by machinery. [See page 287.]

The exhibit of drugs in the French colonial department may be considered, both for number, arrangement, excellent preservation of the specimens, and value, one of the best in the Exhibition. An excellent descriptive catalogue of the products, which greatly enhances their value, has been published.

FRENCH GUIANA.

From *French Guiana* several well-known drugs are exhibited. The drugs apparently peculiar to this colony are as follows:—

Anona muricata, natural order, Anonaceæ (Corossolier).—The leaves are used as a valuable anti-spasmodic; the seeds as an emetic.

Astrocaryum vulgare, natural order, Palmaceæ.—Under

the name of Aouara the root is used as an antisyphilitic remedy.

Boerhavia diandra, natural order, Nyctaginaceæ.—Used as an emetic and cathartic under the name of "ipecacuanha du pays." In Martinique it is known as "ipecac de Guiane."

Bignonia copaia, natural order, Bignoniaceæ.—The bark is used as a purgative, and the leaves as a remedy for the yaws or pian.

Bignonia alliacea, called "the garlic shrub" from its powerful odor, is used as a febrifuge.

Carapa Guianensis, natural order, Meliaceæ.—Bark used (and also in Martinique) as a bitter tonic and astringent, and the oil from the seeds for healing wounds. (This oil will be further alluded to under British Guiana.)

Cedrela Guianensis, natural order, Cedrelaceæ.—Bark used as a tonic and febrifuge.

Coccocypselum tontanea, natural order, Rubiaceæ.—Used for congestion of the liver. The entire plant is used. It might perhaps be worth a trial in this country.

Eryngium fœtidum, natural order, Umbelliferæ (Azier la fièvre).—Used as a sedative in asthma, and in Martinique the roots are used as an emmenagogue and diuretic under the name of "chardon étoile" or "benit."

Guarea Aubletii, natural order, Meliaceæ.—Root-bark posesses powerful emetic and purgative properties.

Hypericum lactiferum.—The resinous juice is purgative.

Hyptis capitata, natural order, Labiatæ (Mélisse indienne).—Used as a pectoral and sedative.

Justicia pectoralis, natural order, Acanthaceæ.—A tea made from the leaves is used as an aromatic pectoral.

Lonchocarpus Nicou.—Used to intoxicate fish.

Mucuna urens, natural order, Leguminosæ.—The seeds of this plant, commonly known as "asses-eye bean," are used in French Guiana for hæmorrhoids. They are slightly diuretic, but have a considerable hold upon popular estimation, both in French Guiana and in Martinique.

Myristica sebifera.—The bark is astringent.

Potalia amara (Grand Matévé).—The infusion of the leaves is used as an emmenagogue and antisyphilitic; in large doses it is emetic.

Vateria Guianensis, natural order, Leguminosæ.—The seeds are rasped, and mixed into a paste with vinegar as a topical remedy for ringworm, hence the tree is known as "bois à dartres."

MARTINIQUE.

From *Martinique* a very large number of drugs are exhibited. Some of these are well-known West Indian drugs, and others more properly belong to the East Indies, while a few, such as Paraguay tea and coca, can scarcely be admitted as belonging to the drugs of the island, since they are only cultivated in the botanical gardens.

Cassia occidentalis deserves a separate notice on account of its extended use in various countries. In Martinique the roots are used as a diuretic and the leaves as a purgative, and they are used for the same purposes in Liberia, Senegal, the Gaboon, Mauritius, etc. The seed, however, is the part of the plant most used. When roasted, it is said to form the best-known substitute for coffee, so that if mixed with ground coffee in a proportion not greater than one-fifth it is impossible to detect it either by sight or taste. The "café nègre," as it is called, is used as a beverage in dyspepsia, nervous asthma, and malarial fever, also as an emmenagogue. In Senegal, the *Cassia occidentalis* is known as "bentamare." It is very abundant in that colony, and could be obtained in considerable quantities at a low price. Already it is said to have been sent to England, Belgium, and Germany in large quantities, and it can be bought in Paris of the fruiterers who supply Algerian produce. It behooves analytical chemists, therefore, to make themselves acquainted with the microscopical structure of the seeds.

Café nègre is commonly used by the negroes as a beverage when the coffee crop has been a bad one.

SENEGAL.

By far the largest exports from *Senegal* consist of ground nuts (*Arachis hypogœa*) for making nut oil, india-rubber, and Senegal gum. The india-rubber appears to be collected chiefly from *Ficus racemosa* and a creeping plant belonging to the *Apocynaceæ* (*Carpodinus sp.*), and appears to be of good quality. The catalogue of the products contains some interesting information concerning Senegal gum, which, as comparatively little is known concerning Senegal gum in this country, may be worth recording.

The annual export of gum from this colony amounts to about 3,000,000 kilogrammes. The gum is collected in November in the windy season, after the periodical inundation is over. It is gathered from several species of acacia, especially *Acacia Verek, A. Neboued, A. albida, A. Adansonii*, etc. The first gathering, called "gomme du bas du fleuvre," is generally buried in the still damp soil, to dry it, by the Moorish slaves who are sent to gather it. It loses much of its weight and value by drying, and is generally covered with a thin coat of sand.

The gum of the second season, which is completely dried when gathered from the trees, and is therefore carried direct to the storehouse, is of much better quality.

A third quality of gum is collected in Upper Senegal; this is extremely friable, owing to the annual conflagrations in the forests, and is worth only from 40 to 50 francs per 100 kilogrammes. The gum is generally obtained by barter from the collectors; cloth, coral, amber, ammunition, and a variety of trifles being given in exchange for it. The principal districts in which the gum is produced, on the right-hand river, are the country of the Brakna and Trarza Moors, who make their slaves collect the gum, while they themselves encamp near the forests, the Galam country, Bondou, and Bambouk. On the banks of the left river, gum is collected in Oualo, Cayor, and Djolof. The principal emporium in France for Senegal gum is Bordeaux, where the gum is sorted into different qualities.

The gum of *A. Adansonii* is of dark color and very astringent. It is used by the Moors for dysentery. Of *Acacia albicans* the powdered twigs are used as an expectorant under the name of "kadd," as well as the roots of another species known as "N'debarga" (*A. microphylla?*). The very astringent pods called nebneb, and the bark of *A. Arabica*, as well as that of *Acacia Sing* ("Singdour") are used in diarrhœa and dysentery. Another species, which has not been determined, but is known under the native name of "Bouille-Bette," is extolled as the antidote to the sassy bark, which is called "Mancona" or "Teli" bark in Senegal. The infusion of this acacia is a powerful emetic.

GABOON.

Although the number of exhibits from the Gaboon colony is not large, several of them are of considerable interest.

The india-rubber exhibited is obtained from a species of *Landolphia*, a climbing plant, belonging to the Apocynaceæ. It has been exported annually to the extent of 400 tons from the Gaboon and its dependencies. Dika bread, from the seeds of *Irvingia Barteri*, occurs among the exhibits of oils and oil seeds. Kola nuts, remarkable for containing theine, and used by the natives as coca is used in Peru, will also attract attention. In Senegal the nuts are worth five francs the kilogramme.

Among the more remarkable drugs of this colony are:—

Atchimé. These poisonous seeds are referred to an undetermined species of *Ignatia.*

Amomun citratum (Zingiberaceæ). The seeds of this cardamom are remarkable for their strong verbena flavor.

Bassia Djavé and *B. noungou*, sp. nov. The fatty oil from the seed is used for rheumatism.

Camma bark. This bark, the botanical source of which is undetermined, is said to be poisonous.

Haronga paniculata (Hypericaceæ). The bark and leaves of this plant, called *Ogina-gina* by the natives, is used in the form of fumigation for fistula.

Ilango. This is a poisonous plant, belonging to the Orchidaceæ, and has not yet been examined. The specimen sent to the Exposition was unfortunately stolen from the bottle on the first day that the building was opened.

Icaja or *Casa.* This is the M'boundou or ordeal poison of Cape Lopez. It is referred to a species of *Strychnos.* The shrub yielding it grows in inundated districts, and is from six to eight feet high; the long taproot is covered with a reddish bark, which is said to contain the active principle. This is soluble in water and alcohol, according to MM. G. Pécholier and C. Saint Pierre, and has an action analogous to that of nux vomica.

Inée or *Onaye.* This is another powerful poison, consisting of the pounded seeds of *Strophantus hispidus* (Apocynaceæ). According to the researches conducted in Russia, England, and France, since 1865, this is one of the most powerful of cardiac poisons.

Okanyago. This is another poison, the botanical source of which is at present unknown.

Tephrosia Vogelii (Leguminosæ). The leaves and pods are used to stupefy fish.

Tetrapleura Thonningii (Leguminosæ). The decoction of the bark is emetic.

Ximenia Gabonensis (Olacineæ). The fruit is laxative, and the seed purgative.

Calabar beans are also exhibited from this colony, but are said to be of rare occurrence there. Among the drugs without name are two which may be worth examining, one of which is a bark used to hasten the fermentation of palm wine, and the other is a root which produces intoxication.

FRENCH COCHIN CHINA.

The exhibits from *French Cochin China* consist almost entirely of well-known drugs. The few which are less known are:—

Casuarina latifolia (Casuarinaceæ). The bark possesses astringent properties.

Cassia Roxburghii (Lauraceæ). This yields a kind of cassia bark.

Sterculia scaphigera (Sterculiaceæ), native name "Luoi Noi" or "Tambayan." These remarkable fruits contain a quantity of insoluble gum and tannin. They are used for affections of the throat and for dysentery. They have already been described under the name of Bootam-paijang.

Aquilaria Malaccensis. The swellings produced on this tree where branches have been broken off yield a perfume known in Cochin China under the name of "Tramtoc," and which is highly prized, costing in the market at Saigon not less than 34 francs the kilogramme. This is probably one of the aloe-woods used in the East. It has a somewhat variegated appearance, owing to the presence of dark resinous stripes.

Thao.—This is a very interesting substance and one which is likely to come into considerable demand in the future. It is a gelatinous preparation made in Cochin China as well as in other eastern countries, from seaweed. In the English market it has frequently appeared, under the name of Chinese or Japanese isinglass, in three different forms. That which is prepared in Cochin China is in bundles of thread-like pieces a foot or more long, about the thickness of whipcord.

The specimens prepared in Japan, numerous examples of which may be seen in the Japanese department, occur in two forms, one in square sticks about 11 inches long and from 1—1½ inches in diameter, and full of cavities, each weighing only about three drachms, and the other in bundles of long shrivelled pipe-like pieces about ⅛th to ¼ inch in diameter and about 14 inches long. The bundles are fastened at the ends with the stems of some grass. When immersed in water these pieces are seen to have the same square shape as the other varieties. One side of the pieces is always more full of diatoms and other foreign bodies, as if the pieces had been formed in a mould in which the sediments of the jelly had gone to the bottom. The cord-like variety made in Cochin China is in long loose bundles. It has much the polished appearance of the Chinese vermicelli made from rice, but that substance will not bend and is much more slender. The following particulars from the catalogue may prove interesting. Various trials have been made with it in France since 1874, especially by MM. D. Gantillon and Co., at Lyons, and the Industrial Society at Rouen. The thao is prepared for use in the following way:—After having been soaked in cold water for about twelve hours, it is boiled for a quarter of an hour, during which it absorbs about 100 times its weight of water. If allowed to cool it becomes a jelly, but if passed through a sieve and stirred until cold it remains fluid and in this state is more easily employed than when hot. The yellowish matter which some specimens contain can be removed by boiling for some time, when it forms an insoluble scum, which appears to consist of very thin fibres and which remain attached to the sides of the vessel.

A singular property and one which perhaps might be turned to valuable account is, that thao-jelly does not decompose solution of permaganate of potash even when left in contact with it for twenty-four hours.

According to M. Heilmann, of Rouen, thao produces, in the proportion of 1 part to 100 of water, a dressing, which is supple and strong, and which gives substance rather than stiffness to calico, while dextrin, like starch, makes the tissue drier and harder and gives less facing to the thread. The addition of glycerin gives a dressing still more flexible and soft, and while rendering the tissues less stiff it communicates more body to them.

The addition of talc gives still greater smoothness. Once dissolved, according to M. Gantillon, thao will mix while hot with any gum, starch, dextrin, or gelatin. The principal advantage of thao in dressing silk fabrics is that while preserving their suppleness it gives them greater glossiness and makes them soft to the touch. The mixture of thao with gum tragacanth is said to be the best method of using it. Thao should, however, be used alone for materials which it is not necessary should be stiffened. As thao is only soluble at a high temperature, a moist atmosphere, fog, or even rain does not affect the material dressed with it.

It combines well with sulphate of copper and the chlorides of aniline and potassium, and can be used in double dyeing.

It also answers well for sizing paper, etc. The only obstacle to its extensive use is its high price. There is, however, no reason why a similar substance should not be made from our common native seaweeds, of which *Gelideum corneum* and *Gracilaria confervoides* approach most nearly in character the algæ from which thao is made. Gelose, of which thao consists, differs from the carrageenin obtained from *Chondrus crispus* in its power of combining with a very large quantity of water to form a jelly; it yields ten times as much jelly as an equal weight of isinglass. For purposes of food thao jelly is not quite so pleasant as animal jelly, as it does not melt in the mouth; it also contains no nitrogen. A great advantage which it possesses is, that it is but little prone to undergo change, so much so that the jelly is sometimes imported from Singapore, sweetened, flavored and ready for use, and may in this state be kept for years without deterioration. The west coast of Australia also yields a seaweed possessing similar properties.

The edible swallows' nests are exhibited in variety both in this department and in that of Réunion. Of these the local service of Saigon shows a fine collection. These nests are objects of considerable trade with China. In lower Cochin China they are collected to the extent of about one hundred kilogrammes per annum, the price varying from 290 to 405 francs per kilogramme. They are collected chiefly on the coasts of Hatien, Binh-Thuan, and Poulo-Condore. On account of the dangerous character of the trade but few people venture to engage in it, and the collection is farmed out by the Government of the colony.

The nests in which the birds live are said to be extremely clean, while those which are abandoned contain often a

quantity of feathers and excrement agglutinated together. Both kinds are collected, the price varying according to purity. Those collected in the Réunion generally contain a number of pieces of lichen (probably *Usnea sp.*) which must to some extent depreciate their value. In the collection of the Dutch colonies a model of the process of collecting the nests may be seen. To use the nests, they are washed in cold water and then heated in a water-bath for about eight hours. The product is then ready to mix with food, meat juice and seasoning, as may be required, after which it is boiled for about a quarter of an hour. To produce about half a litre of soup about 120 grammes of the nests are required.

[*To be continued.*]

Gnoscopine. (T. and H. SMITH.) The well-known chemists, T. and H. Smith, of Edinburgh, have discovered a new alkaloid in opium, which has the composition $C_{34}H_{36}N_2O_{11}$. The discoverers call it *gnoscopine*. A sample of it is exhibited at the Paris Exposition.

Kinate of Quinia for Hypodermic Injection. (HENRY COLLIER.) Recommends kinate of quinia as a very soluble salt, adopted for administering hypodermically. He prepares it by converting calcium kinate into barium kinate, and this, by double decomposition with quinia sulphate, into barium sulphate and quinia kinate. The solution which he uses for hypodermic injection contains 1 in 4.

Chemist and Druggist (London). August.

Carnivorous Plants.—A beautiful series of experiments has been made by Dr. Francis Darwin in illustration of the views of his father, who believes that the power of catching and digesting insects is advantageous to plants, and plays an important part in their economy. The phenomena which have been observed by many, and philosophically considered by a few, are not mere accidents; still less disturbances in plant life. "If," says the Doctor, "this explanation of the facts be not accepted, we find ourselves in the presence of a number of elaborate, but quite meaningless, structures, such as the trap of a Dionæa or Utricularia; delicate powers of discriminating between different kinds of stimuli, as in Drosera; and properties of forming a peptic secretion, such as that in Pinguicula, Dionæa, and Drosera." There is nothing created in nature which is not specially adapted for some distinct purpose, and to think otherwise would be to interpret wrongly the evidences of design. Still, though many observers have acceded to the Darwinian theories on this matter, as no direct proof of advantage accruing to the plant from the capture and digestion of insects has been given, a provisional acceptance of the theory may fairly be followed by a request that such direct proof be furnished.

Darwin (*père*) originally devised a mode of proof. Plants of Drosera were cultivated in plates, each of which was divided into halves by a strip of zinc. The plants on one side of the partition were to have been fed, the other half being kept without food, and their growth was to have been compared.

The term starved was applied to the unfed plants, for the sake of clearness. In this first essay, both the fed and the starved plants died, either poisoned by the zinc or injured in some other way, and hence the experiment failed. A second attempt, made by the son, was more successful, wooden instead of metal partitions having been employed.

The Drosera plants were obtained from a neighboring common, and were planted in moss in six ordinary soup plates: these were placed in two rows on a wood tray having a raised border all round, and were covered by a wooden frame, one foot in height, over which was stretched a gauze netting. The frame lifted off and on like a bell glass, and fitted close within the rim of the tray. The whole apparatus stood near the light in a grape house, where no artificial heat was applied, and where the shade appeared to suit the plants, as they throve wonderfully. The plants and moss were kept damp, and the water was constantly renewed. Each plate was divided into two halves, separated from each other by a thin piece of wood hardly reaching above the surface of the moss. That half of each plate which appeared least flourishing was selected to be the "fed" side, the opposite being labelled "starved." Every precaution was taken to conduct the experiment with accuracy; the plants were arranged with the partition line of each pointing to the light, so that neither side received more light than the other, and the arrangement of the plates was systematically varied so as to prevent any one profiting from light or air more than its fellows. The food was roast meat cut into thin slices across the grain, the fibre teazed, and so comminuted that fifteen weighed when damp only two centigrams; each piece was $\frac{1}{15}$ grain. The food was placed on every leaf which had secretion on the glands. Larger portions were not digested, but covered with mould instead. The first difference noticed between the fed and the starved halves of the plates was that the fed side was clearly greener than the other; the increase in the amount of chlorophyll thus indicated agreed with the result of the final comparison of dry weights, which proved that a much greater quantity of cellulose was manufactured by the fed than by the starved plants. Increase of chlorophyll is associated with increased assimilation of carbonic acid, and this permits the production of a larger quantity of cellulose. The body of the chlorophyll grain being protoplasmic, it is obvious that an increased supply of nitrogen will favor the multiplication of chlorophyll, and increase the starch-producing power of the plant. The absorption of nitrogenous food produced a most decided effect on the number of flower-stems, the fed plants having 173, and the starved plants, 116 only. The number of stems which bore at least one flower was 34 on the fed side, as compared with 19 on the starved.

Healthiness of the leaves was determined by the presence of secretion on the glands; the fed plants exhibited 256 healthy leaves, the starved 187. The diameter of 45 leaves, selected at random from both sides, was measured on the millimetre scale. Forty-five fed leaves gave a total of 328 mm., while 45 starved leaves gave a total of 301 mm.

The capsules being now mostly ripe, there was the danger of loss of seeds by the bursting of the capsules, consequently the flower-stems from all six plates were cut. For the sake of brevity, a running comment on the tables furnished is omitted, and Dr. Darwin's results are above recorded. The minimum number of seeds among the fed capsules was 52, the maximum 168. Among the starved capsules, the minimum number was 44, the maximum 129.

In whatever way the fed and starved plants were investigated, the advantage was on the side of the former. Moreover, though in number and height the fed plants were superior, yet the weights of the stems, and the weights of the seeds on the fed side exceeded the corresponding weights on the starved side in a still higher ratio. Increased weight is a better proof than an increase in numbers or size, of increased power of assimilation.

The striking differences found to exist between the fed and the starved plants was that which related to reproduction of the species; from the results given here in abstract, it would seem that the great advantage accruing to carnivorous plants from a supply of nitrogenous food to the leaves is the power of producing a vastly superior yield of seeds.

Doctor Darwin ventures to think that the above experiments prove beyond question that the supply of meat to Drosera is of signal advantage to the plants, and that there can be no doubt that other insectivorous plants profit in an analogous manner from the capture of insects in a state of nature.

Very remarkable indeed was a last experiment, when three plates of both fed and starved plants, of which the flower-stalks only were gathered, were allowed to rest during the winter, in order to test the relative amounts of reserve material laid up by both.

The plants were forced in the hot-house, and were placed under identical conditions, both remaining without food. Taking 100 as the standard number for the starved

plants, the total weight of the fed plants was 251.6, and the average weight per plant, compared with the standard, 100 for the starved plants, was 213 for the fed. "It is a striking fact," says the Doctor, "that in spite of the relatively enormous quantity of flower-stalk and seed produced in the summer by the fed plants, they were still able to lay by a far greater store of reserve material than their starved competitors."

Essentially similar experiments were described before the Phys. Med. Society of Erlangen by German investigators. The food simply consisted of aphides, instead of meat, and the results demonstrate in the clearest manner the numerous and striking advantages accruing to the fed plants.

L'Orosi. No. 8.

New Process for preparing pure Ammonium Oxalate. (P. E. ALESSANDRI.) Take any desired quantity of absolute or of 95 per cent alcohol, and add to it very strong ammonia solution. Then add a highly concentrated aqueous solution of oxalic acid, until the ammonia is neutralized. Collect the precipitated ammonium oxalate (which is insoluble in alcohol) on a filter, wash it with alcohol, and finally recover the latter by distillation.

Pharmaceutische Zeitung. 61–66.

Oxalic Acid a Solvent of Ozone. (JEREMIN.) According to a report of Prof. Beilstein, Mr. Jeremin communicated to the Russian Chemical Society the fact that a solution of oxalic acid is capable of absorbing considerable quantities of ozone, and that such a solution may be preserved for a long time. An old solution, moreover was found to be even a better disinfectant than a fresh one.

Beware of Fancy Inks! The above journal copies the following from an exchange:

Since the discovery of aniline, a large number of writing inks have been put on the market, which are praised for their fine color, ready flow, and non-corrosiveness. But most of these have the serious fault of fading more or less after some time. For ordinary purposes this may be of no account, but under no circumstances should any documents or books, intended to last, be written with such inks. Before trusting to such fancy inks, subject them to a careful test, by exposing some lines written with it to the direct sunlight for about a month in such a manner that about one-half the writing is securely covered and protected from the light. If after the lapse of that time the least difference is observed in the depth of color between the two portions, the ink should be rejected.

Preparation of Hydrobromic Acid. (O. SCHLICKUM.) The author finds fault with the process proposed in the *Pharm. Centralhalle* (see above, p. 269), because in his experience the addition of alcohol does not by any means remove all potassium sulphate formed. He recommends to go back to the process of preparing it from bromine and hydrosulphuric acid. It seems, therefore, that our colleagues across the water have not yet been informed of what has been accomplished over here in this matter.

The author concludes by drawing again attention to a very simple and constant supply of *sulphuretted hydrogen*, namely a mixture of paraffin and sulphur. A rather large and wide test-tube is half filled with a mixture of equal parts of paraffin and sublimed sulphur, and the orifice is stoppered with a well-fitting cork carrying a bent glass-tube. When the gas is required, the mixture is heated over the flame. As soon as the paraffin is melted, a very abundant current of sulphuretted hydrogen is generated, which ceases immediately on removing the flame, but recommences on again heating. Such a test-tube (half-full) will last a long time.

The Pharmacist. August.

Examination of Bismuth and its Compounds. (REINH. RAHR.) Reports the examination of commercial samples of bismuth and its compounds with the following results: 1, *Metallic Bismuth:* traces of silver, cadmium, arsenic and nickel, notable quantities of iron and copper. 2, *Subnitrate of B.* was found to contain: subchloride of bism. up to 10 per cent, traces of lead nitrate, sodium, and ammonium. 3, *Subcarbonate of B.:* subchloride up to 12 per cent, traces of nitrate of bism., lead, arsenic (only one sample), potassium, ammonium. On the whole, the commercial samples were found tolerably pure.

Canadian Pharmaceutical Journal. August.

Effects of intense Cold on Ferric Hydrate. (E. B. SHUTTLEWORTH.) A freshly made quantity of ferric hydrate was accidentally exposed to a cold of about 10° below zero from Saturday to Monday. When the frozen cake was thawed out, the ferric hydrate had become granular, looked like fine-grain gunpowder, was readily soluble in nitric and hydrochloric acids, but very sparingly in acetic and citric acids. When *Dialyzed Iron* is subjected to a cold sufficient to produce complete congelation, the frozen mass, on thawing, deposits all the oxide in reddish-brown shining scales. The clear, colorless supernatant liquid tastes decidedly more ferruginous than did the original solution, and with nitrate of silver gives a slight cloudiness.

American Journal of Pharmacy. August.

Assay of Commercial Extracts and Resins of Jalap. (CH. D. FARWELL.) The author examined four samples of each. The extract was found to contain respectively 16.3, 18.7, 24, and 24.5 per cent of resin. The four samples of commercial resin contained respectively 94.7, 90.3, 93.5, and 91 per cent of that portion of the resin which is insoluble in ether.

On the Volatility of Glycerin. (NAT. W. LORD.) States that, contrary to the assertion of Dr. E. R. Squibb, in his paper on "Fluid Extracts by Repercolation," glycerin is *not* volatile, as he has proved by a special investigation.

We formerly also believed in the non-volatility of glycerin, when concentrated and heated only moderately, but the use of a glycerin-bath, which we fitted up some years since, and which has "volatilized" a goodly amount of glycerin, has convinced us that glycerin *is* volatile. This may, however, be due to the fact that the surface of the glycerin rapidly absorbs moisture from the air, forming a layer of light solution, which may be more prone to evaporation than the concentrated glycerin alone.

Journal de Pharmacie et de Chimie. August.

Lead in Subnitrate of Bismuth. (ALF. RICHE.) Several authors having lately drawn attention to the presence of lead in commercial subnitrate of bismuth, the author has examined a number of samples and has found in most of them very small quantities of lead, varying from 0.03 to 0.34 per cent. Some samples were entirely free from it. His method of examination is that of Rose, namely: the subnitrate is dissolved in hydrochloric acid, and the excess of acid is almost entirely evaporated off; a few drops of sulphuric acid are added, which precipitate lead sulphate; then alcohol until the liquid begins to get cloudy. After standing twenty-four hours, the sediment is washed by decantation with acidulated alcohol, finally collected on a filter and washed with pure alcohol. The precipitate is then ignited, separate from the filter, and weighed. This gives the amount of lead sulphate, together with traces of silver, iron, *lime*, etc.

Lead in Subnitrate of Bismuth. (CHAPUIS and LINOSSIER.) The authors have likewise investigated this subject. They use the following method: To 3 gm. of subnitrate of bismuth in a capsule are added 4 cc. of a ten-per-cent solution of caustic soda, and enough of a ten-per-cent solution of potassium chromate to impart to the liquid a permanent yellowish color (about 4 cc.). The whole is boiled, the clear supernatant liquid passed through a filter, the residue once more mixed with 1 cc. of soda solution, a few drops of the chromate, and 2 or 3 cc. of water, and the whole then thrown on the filter. Acetic acid is then added to the filtrate to acid reaction. This causes the precipitation of chromate of lead. The authors found among twelve samples only three which yielded traces of lead, one of them between 0.7 and 0.8 per cent, and two only 0.1 per cent.

An Alkaloid in Pomegranate-Bark. (DURAND.) The author, who is a pharmacist practising in Algiers, and who evidently could have had no information as yet of the dis-

covery, by Tanret, of an alkaloid in pomegranate-bark, has likewise discovered this alkaloid, which he calls *granatine*. Tanret has applied to his the name *pelletierine*, which Hager proposed to change to the more rational *punicine*. The latter name is likely to be the one finally adopted.

False and true Angostura Bark. (OBERLIN and SCHLAGDENHAUFFEN). The title of the authors' paper is in full: *Etude histologique et chimique de differentes Ecorces de la famille des Diosmées*, and is accompanied by nine excellent plates, giving the anatomical structure of the various barks to be mentioned directly. The authors have noted that true Angostura bark (from *Galipea officinalis*) is frequently found mixed, in France, with one or more of the following foreign barks.

1. False Angostura bark, from *Strychnos Nux Vomica* L.
2. Brazil Angostura bark, from *Evodia febrifuga* St. H. (*Esenbeckia febrifuga* Mart).
3. Copalchi bark, or Cascarilla of Trinidad or Cuba, fr. *Croton Pseudochina* Schlecht.*
4. Guaiac, fr. *Guaiacum officinale* L.
5. Tecamez bark (origin unknown).†
6. *Samedera Indica* Gaertn..

For a description of the microscopic appearances of these barks, and the means of distinguishing them chemically, we must refer to the original.

Journal of the Chemical Society. August.

The Alkaloids of Veratrum Sabadilla. (C. R. ALDER-WRIGHT and A. P. LUFF.) The authors sum up at the end of a lengthy paper on this subject, as follows:

1. The seeds of *Veratrum Sabadilla* (or *V. officinale, Sabadilla officinarum, Asagræa officinalis*) contain an alkaloid, first isolated by Couerbe, and termed by him *veratrine*, which is indicated by the formula $C_{37}H_{53}NO_{11}$, or one very close thereto; this is non-crystalline, but furnishes certain crystallizable salts; on saponification it splits up into veratric acid (dimethyl-protocatechuic acid) and a new base, *verine*.

2. In addition, a considerably larger quantity of another alkaloid is present, first isolated by Merck, and described by him as *veratrine*. To distinguish this from the former alkaloid, which has the prior claim to this name, the authors propose to call it *cevadine*. This is crystallizable, melts at 205–206°, and on saponification splits up into an acid and into a new base *cevine*.

3. Weigelin's *sabadilline* could not be found by the authors; but they found an alkaloid partly agreeing with and partly differing from that described by Weigelin. The authors termed it *cevadilline*.

Archiv der Pharmacie. July.

On Theobromin. (O. DUNKER and C. TREUMANN, PROF. DRAGENDORFF.) During some previous investigations, it was found that theobromin is contained, not only in the cotyledons, but also in the shells of cacao-seeds. Hence the suggestion offered itself, that a larger and cheaper yield of theobromin could be obtained by using the cheap cacao shells. Four kilos of the latter were found to yield 13.5 gm. of pure theobromin; the cost of preparing this was 4.36 marks, while the same quantity, bought in the market, would have cost at least 25 marks.

Analysis of the Bulbs of Erythronium Dens Canis L. (THE SAME.) These bulbs are used by the inhabitants of Siberia as food, and have been recommended as energetic aphrodisiacs, and as remedy for colic and epilepsy.‡ Their Siberian name is *kandyk*. The analysis proved the presence of the usual organic constituents of plants, and the absence of any special proximate principles.

Zeitschrift f. Analytische Chemie.

On Hehner's Method of Butter-Analysis. (W. FLEISCHMANN and P. VIETH.) The authors have made a long series of experiments to test the accuracy of Hehner's process, which consists in estimating the percentage of fatty acids insoluble in water. They found that pure butter contained from 85.79 to 89.73 per cent of these acids; figures which are a trifle higher than those established by Hehner. In the course of the article, mention is made of eleven American samples of butter, which the authors had sent to them from Hamburg. These were taken from original packages, and four of them were pronounced by the Hamburg dealer as "*probably adulterated.*" Analysis, however, proved that they were perfectly pure, as none of them contained over 88.56 per cent of insoluble fatty acids.

The statement is also made, that large quantities of American *Oleo-margarine* are imported in Europe, where this article is either at once sold as such, or worked over again by the domestic factories.

Pharmaceutische Centralhalle.

Blatta Orientalis, used for a long time as a domestic diuretic in Russia, and a few years ago introduced into medicine, is the dried brownish-black cockroach. The dose is 0.1 to 0.5 gm. (1½ to 7 grs.) three to five times daily in powder, or in form of infusion or tincture.

Tinctura Blattæ orientalis is prepared by digesting 1 part of the coarsely powdered insects in 5 parts of dilute alcohol.

Pharmaceutische Post. No. 14.

Chrysophanic Acid from Rumex obtusifolius, and from Goa Powder. (DR. AL. J.) 130 grammes of the root of *Rumex obtusifolius* yielded, on extraction with benzol, 0.2 gm. of chrysophanic acid.

The author has also observed that recent lots of Goa powder show a decided deficiency of chrysophanic acid; while it formerly contained as much as 80 per cent, he could only obtain at most 20 per cent, even after six repeated digestions with hot benzole, from the lots in question. It will be necessary, therefore, to test each lot of Goa powder hereafter, before using it.

Solubility of Salicylic Acid in Water. (SAME.) A solution of 0.5 gm. of salicylic acid in 150 gm. of hot water separates, on cooling, crystals, which do not increase in quantity after 3—4 days. These weigh, when dried, 0.17 gm. Hence 1000 parts of the saturated solution therefore contain, at ordinary temperature, 2.2 parts of the acid.

Repertoire de Pharmacie. No. 7.

Sulphovinates of Quinia. (P. CARLES.) There are two such salts, one being a neutral, the other an acid salt:

1. *Acid Sulphovinate of Quinia.* Obtained best, according to the author, by dissolving 5.48 parts of crystallized sulphate of quinia, and 4.23 parts of barium sulphovinate, each in boiling 90 per cent alcohol, mixing the solutions, filtering from the precipitated barium sulphate, and distilling off the alcohol, or evaporating the filtrate on the water-bath. The residue is the salt in question, which is very hygroscopic and difficult to crystallize. It is probably too acid for hypodermic use, although it is exceedingly soluble.

2. *Neutral Sulphovinate of Quinia.* Obtained best as follows: 16.9 parts of sodium sulphovinate are dissolved in 200 parts of 90 per cent of hot alcohol; and 42.8 parts of sulphate of quinia in 600 parts of 90 per cent of hot alcohol. The two solutions are mixed hot, allowed to cool, and the precipitated sodium sulphate is removed by filtration. The filtrate is deprived of alcohol by distillation and evaporation, and the residue dried at a very gentle heat. If overheated, it turns reddish. This salt is soluble in 3 parts of water, and much more so in alcohol.

Pharmaceutische Zeitschrift f. Russland. No. 13.

Alkaloids of Calabar Bean. (DR. A. POEHL.) This article presents nothing specially new, but in view of the fact that physicians have paid but little attention to the results of the chemical investigations made on this subject during the last two years, we recapitulate the most important facts:

Calabar beans contains two alkaloids:

1. *Physostigmine* or *Eserine.* This is the only alkaloid of calabar used in medicine. It has anti-tetanic properties, is soluble in ether, and is best used in form of sulphate. The hydrobromate is likewise in use.

Previous to Harnack and Witkowski's investigations (1876), there was only *one* alkaloid known, namely "eser-

* See *Pharmacographia*, p. 507. † See *Pharmacographia*, p. 321.
‡ See *Rosenthal, Synopsis Plantarum diaphor.*, p. 86.

ine," which, however, was an impure substance, being contaminated with the very poisonous *calabarine*. Since that time, chemical manufacturers have separated the latter, and pharmacists as well as physicians should therefore be careful not to use any eserine manufactured previous to 1877.

2. *Calabarine*, a highly poisonous alkaloid, resembling strychnia in its action, insoluble in ether, and distinguished from the former particularly by being precipitated from its solutions by metatungstic acid, which is not the case with physostigmine or eserine.

Failure of Lactic Acid as a Narcotic.—It is not long since Preyer thought it probable that, because lactic acid is a product of muscular action, and muscular action has a sedative effect, lactic acid might be found to act as a sedative when given in sufficient doses. A considerable number of cases have been reported in which it seemed, to the observers, to have the effect described; while others, who hold to the theory that an excess of lactic acid in the blood is the cause of rheumatism, reported instances in which the use of the acid in doses sufficient to act as a sedative had resulted, instead, in an acute attack of rheumatism. A most thorough trial of its sedative value has recently been made by Dr. A. Auerbach, of Berlin, who concludes from the results following the use of sixty doses that it is capable of no sedative influence whatever.

The persons experimented upon were inmates of a lunatic asylum, and care was taken to administer the acid to those who were unused to sedatives as well as those who use hypnotics habitually. It was given both during daytime and at night, with every condition likely to favor sleep; a quiet, darkened room being used when it was given in daytime. The dose used varied from 10 to 35 grammes (2½ ʒ to 1 ʒ 45 gr.) of lactic acid, and 20 to 40 grammes (5 ʒ to 10 ʒ) of lactate of soda. In not a single instance could any distinct sedative influence be traced. In one-third of the cases serious intestinal disturbances were caused.

New Use for Lemon Verbena.—The *Scientific American* says: The well-known fragrant garden favorite, sweet-scented or lemon verbena (*Lippia citriodora*) seems to have other qualities to recommend it than those of the fragrance for which it is cultivated. The author of a recent work, entitled "Among the Spanish People," describes it as being systematically gathered in Spain, where it is regarded as a fine stomachic and cordial. It is used either in the form of a cold decoction, sweetened, or five or six leaves are put into a teacup, and hot tea poured upon them. The author says that the flavor of tea thus prepared "is simply delicious, and no one who has drunk his Pekoe with it will ever again drink it without a sprig of lemon verbena." And he further states that if this be used, one will "never suffer from flatulence, never be made nervous or old-maidish, never have cholera, diarrhœa, or loss of appetite."

Adulterated Cinnamon.—Some time ago a Hamburg house received from a drug-miller in Hanau one hundred pounds of powdered cinnamon, which had been ordered "of the best quality." Its appearance being unsatisfactory, it was examined by experts, who found it to be a mixture of some ground woods with a little oil of cinnamon. Further inquiries elicited the fact that it was made of ground cedar wood and linseed-cake.

To make Holes in Glass Plates.—Make a circle of loam or cement upon the plate of glass, somewhat larger than the intended hole, pour some kerosene within the circle, ignite it, and let it burn up, then place the plate upon a moderately hard support, and by means of a hammer and a stick, smaller than the opening desired, strike a rather smart blow upon the spot, which will cause a rough-edged opening, the irregularities of which may be removed by a file. According to another statement, cold water may be poured upon the spot, which is said to be even better in its results.

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AIDS TO CHEMISTRY. Specially designed for Students preparing for Examinations. By C. E. ARMAND SEMPLE, B.A., M.B., etc. Part I. Inorganic. Oxygen to the Metalloids inclusive. 16mo. London, 1877, pp. 64. Part II. Inorganic. The Metals. 16mo. London, 1878, pp. 60.

THESE handy little books, which are part of a series of "*Aids for Students*," deserve to have special attention drawn to them. While they are, on the whole, mere outlines and presuppose a previous instruction in the first elements of the science, they are nevertheless of great value for repeating and quizzing. Indeed, we know of no other equally well-written and better arranged elementary text-books on chemistry. We would particularly recommend them to our medical and pharmaceutical students, as a practical help in connection with the larger text-books of Fownes, Attfield, etc.

A PRACTICAL TREATISE ON THE MEDICAL AND SURGICAL USES OF ELECTRICITY.—Including Localized and General Faradization; Localized and General Galvanization; Electrolysis and Galvano-Cautery. By GEO. M. BEARD, A.M., M.D., and A. D. ROCKWELL, A.M., M.D. Second Edition, revised, enlarged, and mostly rewritten. With nearly two hundred illustrations. New York: William Wood & Co., 1878.

SINCE the appearance of the original edition of this work in 1871, it has been the standard authority in this country; but the second edition, which has just come to hand, is as far superior to its predecessor as the former was to similar works of its period. This result has not been attained without a very considerable increase in size both in the number and dimension of the pages, and the complete rewriting of most of the chapters, so that, to all intents, it is a new book instead of a new edition.

About one hundred pages are devoted to Electro-Physics, and the same amount to Electro-Physiology. Under the head of Electro-Therapeutics we find, of course, the bulk of the matter, not the least interesting of which is a chapter on the History of Electro-Therapeutics; another on the General Therapeutical Action of Electricity, and still a third, consisting of General Suggestions in Regard to the Use of Electricity as a Therapeutic Agent, into which the authors have condensed the results of their very extended experience in the use of this remedy and which will, therefore, be of the greatest benefit to the physician whose own opportunities for observation have been limited. Before proceeding to the special applications of Electricity, chapters are introduced relating to the Comparative Value of the Galvanic and Faradic Currents—The Principles of Electro-Diagnosis—Electro-Therapeutical Anatomy—Apparatus—Localized Electrization—General Faradization—Central Galvanization—Electric Baths—etc.

A section of nearly one hundred pages, devoted to the surgical uses of the agent, completes the volume and also, we may say, the subject, so far as we are at present informed, regarding its practical features.

ATLAS OF SKIN DISEASES. By LOUIS A. DUHRING, M.D., Professor of Skin Diseases in the Hospital of the University of Pennsylvania. Part IV. Philadelphia: J. B. Lippincott & Co., 1878.

THERE are many features existing in this atlas which recommend it to the favor of practitioners of medicine: 1. It is by one of our most able authorities. 2. Its illustrations consist of cases selected from a large field of observation. 3. As a life-like series of plates rendered with artistic skill and all the resources of chromo-lithography, it has no equal. 4. It is likely soon to become rare and difficult to obtain, owing to the erasure of the stones after a limited number of impressions have been made.

The present fasciculus embraces plates and text to illustrate Vitiligo, Alopecia Areata, Tinea favosa, and Eczema (rubrum), and is fully equal in excellence to its predecessors.

ON THE THERAPEUTIC FORCES: An Effort to Consider the Action of Medicines in the Light of the Modern Doctrine of the Conservation of Forces. By THOMAS J. MAYS, M.D. Philadelphia: Lindsay & Blakiston, 1878, small 8vo, pp. 143.

THE author has evidently expended much honest thought and labor upon the material of this thesis, and it is to be regretted that it does not settle, more definitely than has yet been done, the nature of the law of therapeutic action. That he fails, in our estimation, to make it clear is not surprising, when we consider the truth of the quotation from H. Bence Jones, which is borne on the title-page, viz., 'Perfect knowledge of the action of medicines can only be obtained when the action of each force in each medicine upon each force in each texture of the body can be estimated.'

That we have not attained to anything like such perfect knowledge is beyond discussion, and essays like the present have only the value of offering, through the illustrations used to support their fundamental theories, suggestions which enlarge our knowledge of the ways in which individual remedies will act under certain well-defined circumstances. The reader who has no comprehensive theory to support will find practical suggestions herein contained; while the one whose theory of therapeutic action is equally comprehensive, but opposed to that of Dr. Mays, will suffer no harm from studying this view of the question.

Four clases of remedies are enumerated, viz., *Chemical Stimulants*, of which fat and oil, starch, sugar, cod-liver oil, alcohol, phosphorus, and oxygen are mentioned as examples; *Mechanical Stimulants*—quinia, quassia, berberis, columbo, gentian, nectandra, ammonia, iodine and the iodides, cold, opium, antimony, croton oil, cantharides, mustard, turpentine, hot poultices and baths, and friction being the examples considered; and *Narcotics*, consisting of some of the foregoing when used in large doses.

1. OBSERVATIONS CONCERNING THEOBROMIN, from studies by MESSRS. O. DONKER and C. TREUMANN, collated by DRAGENDORFF.

2. ANALYSIS OF THE BULBS OF *Erythronium Dens Canis* L. by DRAGENDORFF. 8vo, pp. 13. Reprint from the *Archiv der Pharmacie*. Privately published.

ON THE EFFECT OF ATROPIA IN DIMINISHING THE PAINS AND SHORTENING THE DURATION OF THE FIRST STAGE OF LABOR. By HENRY L. HORTON, M.D. Reprinted from the *Amer. Jour. of Obstet.* 8vo, pp. 20.

EIGHT cases are clearly reported and the favorable results following the submucous injection of $\frac{1}{60}$ to $\frac{1}{70}$ of a grain of atropia are noted. In each instance the remedy was, apparently, of value in relaxing the circular muscular fibres of the cervix, and although the woman usually showed the constitutional influence of the atropia, we do not observe any unfavorable influence either upon the health of the infant or upon the mammary glands.

PHOSPHORUS IN NUTRITION, AND THE MINERAL THEORY OF CONSUMPTION AND ALLIED DISEASES. By M. F. ANDERSON, L.R.C.P., etc. London: Baillière, Tindall & Cox, 1878, 8vo, pp. 178, xxviii.

A BETTER title for this work, in our estimation, would have been The Chemical Theory of Nutrition, since it is rather an extended and thorough review of the application of chemistry to the determination of the constituents of food and of the tissues of the body. Excepting what the writer has to say in conclusion upon the valuable effects of phosphates when administered in consumption, our title appears to us more descriptive than his.

Without doubt, the health of the body requires that food should contain the elements of which the tissues are composed, in quantities sufficient and form suitable for appropriation, but it is likewise beyond doubting that in practice it is not to any considerable extent possible to influence the vital changes which determine how much of these elements shall be assimilated, or when it shall be done. Just what the essential nature of the vice of constitution is which influences perversion of nutrition is the main question, and this is utterly beyond the abilities of the chemists to tell us.

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THIS is the best catalogue of technical works in print, available to the profession, and its possession should be the effort of every physician who has occasion to refer to books. It gives, under an alphabetical arrangement of subjects, the name of the author, next the title of the work, its size, date of last edition, and retail price. The list of publications of the Surgeon-General's office, War Department, is a valuable feature.

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Rendu (Joanny). Etude expérimentale et comparée sur l'arsenic et l'huile de foie de morue dans le traitement de la phthisie pulmonaire. 8vo. Paris. 10 plates. 3 fr.

Snaith (W. A.). Elementary Botany. With References to the Solution of Questions given at the Departmental Examinations in Science. 3d ed. 12mo, pp. 98. 6*d.*

The Cultivation of the Opium Poppy (*Papaver somniferum*), which has hitherto been exclusively confined to the East, bids fair to become thoroughly established and remunerative in Eastern Africa. Seeds of the best kind have been imported from Malwa into Mozambique, where 50,000 acres of uncultivated State land have been granted to a company, with a capital of 178,000*l.*, for the purpose of cultivating and trading in opium.

Condy's Oxygen Cascade is the name given to a novel contrivance for disinfecting the air of a room, and consists of a stand on which two basins are placed, one above the other. Depending from the rim of the upper one is a circle of threads which absorb, by capillary attraction, a solution of potassium permanganate from the upper basin, and allow it to drip into the lower one. By this means, the fluid is exposed to the action of a large surface of air, and gives up its oxygen to any floating particles of organic matter. Its efficacy is shown by the fact that by the time it reaches the lower basin, the purple solution has become decolorized. H. B. Condy, of Battersea, England, is the manufacturer.

To make Paper Incombustible.—Saturate the paper successively with a solution of ammonium sulphate, magnesium sulphate, and borax. Or saturate it with a solution of magnesium borate.

Castor-oil Manufacture. — One firm in Belleville, Ill., turns out 150,000 gallons of castor oil per year.

NOTES, QUERIES AND ANSWERS.

[*Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us as come within the scope of this journal, provided they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue.*]

No. 431.—**Croton ; Croton-Chloral** ("Pluto," Terre Haute, Ind.).

This correspondent asks how the name "Croton" has got into the term "Croton-chloral," and whether the latter is a hydrate or a salt.—Croton-chloral and croton-chloral hydrate, when first discovered, were found on analysis to bear a certain relationship to *crotonic acid.* This is a peculiar organic acid, which had previously been discovered in *croton-oil.* Crotonic acid has the composition $C_4H_6O_2$ (=methacrylic acid); croton-aldehyde, a derivative of the preceding, is C_4H_6O; and croton-chloral, prepared by passing chlorine through the preceding, is $C_4H_3Cl_3O$. The "croton-chloral," which was first prepared by Dr. Liebreich, by passing chlorine through ordinary aldehyde (derived from our common ethyl-alcohol), was at first supposed to have the composition $C_4H_3Cl_3O$, and was therefore supposed to be identical with the above chloral derived from crotonic acid ; hence it was named croton-chloral. It has, however, since then, been proven that this compound has the composition $C_4H_5Cl_3O$, and that it is, therefore, the chloral belonging to the butyl series, and therefore should be called *butyl-chloral.* (See NEW REM., 1877, 307.) Both the ordinary chloral (ethyl-chloral) and this butyl-chloral are used in medicine in the state of hydrate, namely :

Ethyl-Chloral Hydrate (or ordinary Chloral Hydrate) $C_2HCl_3O.H_2O$

and Butyl-Chloral Hydrate (otherwise : Croton-Chloral Hydrate) $C_4H_5Cl_3O.H_2O$.

This *might* be called a salt, because water here appears to play the part of an acid ; but it is not usual to do so.

No. 432.—**Postage-Stamp Mucilage** (Hawkins, Tex.).

The composition of this has been *said* to be :

Dextrin	2 parts.
Acetic acid	1 part.
Water	5 parts.

Dissolve in a water-bath and add

Alcohol	1 part ;—

but we are informed that another mixture is used at present. We will endeavor to learn its composition.

No. 433.—**Chlorodyne** (G. H. F., Toledo, Ohio.).

The formula which is supposed to approach nearest to the original preparation of Dr. J. Collis Brown is that given by Squire in his companion to the Brit. Pharm. (11th ed., p. 96). This is as follows :

Chloroform	fl. ℥ 4.
Ether	fl. ℥ 1.
Alcohol	fl. ℥ 4.
Molasses	fl. ℥ 4.
Extract of licorice	℥ 2½.
Morphia hydrochlorate	gr. 8.
Oil peppermint	♏16.
Hydrocyanic acid (2 per cent)	fl. ℥ 2.
Syrup	fl. ℥ 17½

Dissolve the morphia salt and the oil of peppermint in the alcohol ; mix the chloroform and ether with this solution; dissolve the extract of licorice in the syrup and add the molasses ; shake these two solutions together and add the hydrocyanic acid.

We would recommend to use only purified extract of licorice, of soft consistence and entirely soluble, to make this preparation, as the amount of deposit will thereby be

considerably reduced. There have been a great many formulæ of this preparation published. We have about eighteen different ones on file; but as we ourselves prefer that given above, we do not wish to induce others to make use of different ones.

No. 434.—**Prescription Latin** (Zanesville, Ohio).

This correspondent asks us to explain the meaning of the phrase *Dentur tales doses No. X.*, occurring at the foot of the explosive prescription mentioned in our July number, page 197.

The meaning of the words *dentur tales doses No. X.*, or in full *dentur tales doses decem* is: "there shall be given ten such doses," meaning that the whole of the prescription is *one* dose, and that it is to be repeated ten times. *Dentur* is third pers. plur., present subjunct. passive: "they shall or may be given;" *tales doses* is nom plur. of *talis dosis* "such a dose;" *No.* is kitchen Latin: *numero* "by number;" *X.* is *decem*, "ten."

No. 435.—**Clarifying Syrups, Jellies, etc.** (A. S. S., Waco, Texas).

Syrups, jellies, many canned fruits, sorghums, etc., and all liquids which are heated to about 200° F. or to boiling, previous to the final closure of the vessel, may be clarified by mixing with the liquid, while still cold, some white of egg well beaten and disintegrated. The white of one egg will generally suffice for two quarts of the liquid. Should the latter be very opaque or full of foreign matter, more must be used. The whole is then heated or raised to boiling, *without stirring*, if possible, when the albumen will rise to the top, enveloping all impurities. All coarser impurities or foreign matter should be previously removed by straining or filtration.

No. 436.—**Suppositories and Soluble Bougies** (J. A. H.).

You will find the desired information in *Parish's Pharmacy*, in NEW REMEDIES (1877, 182, 189, 302, etc.), in U. S. Dispensatory, etc. We can refer you to no special work on this subject. If you will specify exactly what you wish to know particularly, we will try to answer you.

No. 437.—**Sozodont.** (Query).

This consists of two applications contained in a square box, one being a bottle containing about 60 grammes of a reddish liquid, the other a box containing about 6 gm. of a heavy powder. The liquid, according to Schädler, consists of a solution of 5 gm. of castile soap in 6 gm. glycerin, 30 gm. alcohol, 20 gm. water, aromatized with a few drops oil of peppermint, cloves, cinnamon, and star-anise, and slightly colored with cochineal. The powder is a mixture of calcium carbonate, magnesia, and Florentine orris-root.

No. 438.—**Elixir (or Wine) of Iron, Beef, and Cinchona** (G. P. C., Boston, Mass.).

One of our correspondents has furnished us the following formula for preparing this compound, which he says yields a very palatable and handsome product. We have ourselves had considerable experience with this preparation, and are just engaged in some experiments for improving the process. We shall take occasion, hereafter, to give some of our experience in the matter.

Yellow cinchona bark, in moderately fine powder	8 ℥
Ammonio-citrate of iron	4 ℥
Sherry wine, prepared as directed	q. s.
Essence of orange (1 in 10)	4 fl. ℥
" of cinamon (1 in 10)	1¼ fl. ℥
" of bitter almonds (1 in 10)	1 fl. ʒ
Extract of beef, Liebig's	4 ʒ
Citric acid	½ ℥
Hydrated oxide of iron, fresh and drained	q. s.
Syrup, sufficient to make	1 gall.

Take any convenient quantity of sherry, enough to make three or four lots of the above preparation, mix it with hydrated oxide of iron, and shake it frequently during at least one week. For 1 gall. of sherry, the pulp obtained by precipitating 1 fl. ℥ of solution of chloride of iron is sufficient. In precipitating the iron salt, care should be taken that some of it remain undecomposed, that is, ammonia should be added in quantity not sufficient to precipitate all the oxide; and the precipitate should be washed until the washings cease to give a blue reaction with potassium ferrocyanide. This prepared sherry is kept in stock, and filtered just before use.

Mix the powdered cinchona bark with hydrated oxide of iron (moist, but well washed), obtained from 1 fl. oz. of solution of chloride of iron, and enough water to produce an intimate mixture, which is to be dried by a gentle heat. The dry mass is rubbed to powder, moistened with the prepared sherry, packed in a conical percolator, and percolated with more of the sherry, until ½ gall. of percolate is obtained. Add to this the citric acid; then dissolve in it the extract of beef and add the three essences. The latter are made by mixing one measure of the respective essential oil with nine measures of stronger alcohol. Let the whole stand for about one week in a cold place, until the insoluble matters have separated. [These consist to a great part of phosphates from the extracts of beef, which are more or less precipitated according as the liquid contains more or less alcohol. This is a serious disadvantage, since the phosphates are an important constituent of the extract.—ED. N. R.] Then filter the whole, and, if necessary, pass enough sherry through the filter to obtain ½ gall. of filtrate. Finally, add ½ gall. of syrup.

No. 439.—**Emplastrum de Vigo cum Mercurio** (H., N. Y.).

This is a plaster, officinal in the French and some other pharmacopœias. It is a very old preparation, but has been somewhat modified and simplified in the course of time. The directions of the *Codex* are as follows:

Lead-plaster	2,000 parts.
Yellow wax	100 "
Rosin	100 "
Olibanum, powdered	30 "
Ammoniacum, powdered	30 "
Bdellium, powdered	30 "
Myrrh, powdered	30 "
Saffron, powdered	20 "
Mercury, metallic	600 "
Turpentine	100 "
Liquid storax, purified	300 "
Oil of lavender	10 "

Melt together the first three substances, then add the powders; finally, when the plaster is almost cold, the mercury previously "extinguished" (=rubbed till globules cease to be visible) by rubbing it with the turpentine, storax, and oil of lavender.

Giovanni da Vigo (or Johannes de Vigo) was born at Rapollo, in the district of Genoa, in Italy, in 1460; became the founder of a medical school, which sent forth many celebrated surgeons. In 1503, he was named physician to the Cardinal Giuliano della Rovere, which position he retained when the latter was made pope, under the name of Julius II. He died in 1520.

No. 440.—**Hamburg Tea** (C. G. K. M., Carrolton, Ind.).

A common formula for preparing this is the following:

Senna leaves	8 parts.
Manna	4 "
Coriander	1 "

Mix.

Correction.—In the formula of *Confectio Damocratis* in our last number, on page 249, first column, line 38, read ää 5 ʒ instead of ää 3 ʒ. Line 44, read *Arum* instead of *Aram*.

Increase in the Use of Mineral Waters.—The *Wine and Fruit Reporter*, of this city, calls attention to the remarkable increase during the present season in the demand for mineral waters.

ANALYSES OF PHARMACEUTICAL CHEMICALS AND PREPARATIONS.

No more samples will be issued for competitive analysis, but in the future this department will be devoted to practical methods of pharmaceutical analysis, and conducted, as heretofore, by Mr. HENRY B. PARSONS.

THE last sample sent for analysis was commercially ("chemically") pure aceto-arsenite of copper [$3(CuO.As_2O_3).Cu(C_2H_3O_2)_2$], now universally sold as "Paris green." It differs from what was formerly known as Paris green or Scheele's green [$CuHAsO_3$), or $Cu_3(AsO_3)_2$?] both in color and composition.

It is prepared by boiling together ten parts of good verdigris (basic cupric acetate of variable composition) with eight or nine parts of arsenious oxide. Another method is as follows: treat fifty pounds of blue vitriol ($CuSO_4.5H_2O$) and ten pounds of lime (CaO) with twenty gallons of ordinary vinegar. The lime combines with the sulphuric acid radicle, forming a precipitate of calcium sulphate ($CaSO_4$), leaving cupric acetate ($Cu(C_2H_3O_2)_2$) in solution. The clear liquid is siphoned off and treated with a boiling solution of fifty pounds of arsenious oxide (As_2O_3). The salt thus made is quite apt to contain traces of calcium sulphate. If a cheaper "bug poison" is to be made, the calcium sulphate is not removed; as thus prepared, the salt contains nearly thirty per cent of calcium sulphate.

As will be seen upon studying the above processes, Paris green is likely to contain an excess either of arsenious oxide or cupric acetate. Which salt is in excess may be determined by treating a portion of the sample with considerable warm water, filtering, and testing the filtrate; arsenious oxide is usually found to be in slight excess, as was the case with this sample.

It is easy to estimate, quite closely, the impurities in Paris green. The pure salt is freely soluble in water of ammonia, while all common adulterants—(as gypsum ($CaSO_4.2H_2O$), plaster Paris ($CaSO_4$), barytes ($BaSO_4$), bone dust ($Ca_3(PO_4)_2$), etc.) are insoluble. Take one gram of the powder, treat with ammonia, filter and wash with ammonia until the residue is not colored with copper salt. Dry the residue and weigh. Every .010 gm. equals one per cent of adulteration. Judged by this standard, the present sample was free from adulteration. Let us now make a systematic examination of the powder, to see what slight impurities are present.

I am indebted for much that follows to the excellent analyses of "Hedera," "Davy," and "E."

I. Preliminary Examination.

From its appearance the powder is suspected to be Paris green. 1. Heated on porcelain, most of the substance volatilizes, a black residue remaining. This residue moistened with HCl and heated in the blow-pipe flame imparts a purplish-blue color, due to presence of *copper*.

2. Heated in a closed tube; acetous vapors evolved, octahedral crystals (As_2O_3) condense in cool part of the tube, and a black residue (CuO) remains in the lower part.

3. Heated in closed tube with a charcoal splinter; instead of As_2O_3, a black ring of elemental arsenic (As) condenses in the cool part of the tube. Acetous vapors are evolved, also a slight garlic odor is noticed, due to volatilized arsenic. If heat is long continued, part of the CuO is reduced to Cu.

4. Heated on charcoal in reducing flame, with carbonate of sodium—an odor like garlic, due to reduction of As_2O_3 to As by the charcoal, and a green tinge to flame, due to presence of Cu. A malleable button of copper remains; in some cases the button is not very malleable, because considerable arsenic remains combined with it.

5. In beads of microscopic salt and of borax: in oxidizing flame, green while hot, blue when cold; in reducing flame, red when hot or cold, due to reduction of CuO to Cu_2O.

II. 1. Treated with considerable cold water, and allowed to stand twenty-four hours, then filter. The filtrate gives tests for As_2O_3, Cu, and H_2SO_4 in very faint traces only—see III. From this we conclude that the acetate used was contaminated with $CuSO_4$; and that in the manufacture a slight excess of As_2O_3 was used; this As_2O_3 cannot precipitate the $CuSO_4$ in absence of some base to combine with the H_2SO_4. In other words, arsenite of copper is soluble in dilute H_2SO_4.

2. Readily soluble in warm dilute HCl.

3. Readily soluble in nitric, and in nitrohydrochloric acids. If the acid is strong, or its action long continued, part or all of the arsenious oxide is changed to arsenic acid, thus:

$$3As_2O_3+4HNO_3+7H_2O=6H_3AsO_4+4NO.$$

It must be borne in mind that arsenic acid is not readily precipitated by hydrosulphuric acid, while arsenious oxide is. If, then, a solution which contains an active oxidizing agent (as HNO_3, Cl, Br) is to be examined for arsenic, it is necessary to reduce the arsenic acid to arsenious condition. This may be done by treating the solution with large excess of sulphurous anhydride, made according to U. S. P. directions for Acidum sulphurosum. The excess of SO_2 should be expelled, for if free SO_2 is present in a solution, the treatment with H_2S causes a bulky precipitate of sulphur to be deposited, thus:

$$5SO_2+5H_2S=H_2S_5O_6+5S+4H_2O.$$

Neither must free nitric acid nor chlorine be present, as they also precipitate sulphur from H_2S. The action of SO_2 upon H_3AsO_4 is explained by this equation:

$$2H_3AsO_4+2SO_2=As_2O_3+2H_2SO_4+H_2O.$$

4. Ammonia dissolves the salt completely; upon evaporation of free ammonia an arsenite of copper of a different green color from the original is slowly deposited. It is probably of the same composition as Scheele's green.

5. The powder treated with solution of potassic hydrate is decomposed; blue cupric hydrate is precipitated, and the solution contains potassic acetate and arsenite. Upon boiling the cupric hydrate ($Cu(OH)_2$) in presence of free alkali and As_2O_3, red cuprous hydrate is precipitated, and the arsenious oxide changes to arsenic acid:

$$As_2O_3+4[Cu(OH)]_2+H_2O=2H_3AsO_4+2[Cu_2(OH)_2]$$

This H_3AsO_4 must be reduced to As_2O_3, as directed under II., 5, before it can be completely precipitated by H_2S.

III. *Special Tests.*

(*a.*) *For Arsenic.* Besides the preliminary tests and the ordinary method by precipitation in group by H_2S, some direct tests are valuable.

1. "*Davy's Test.*" Make sodium amalgam by boiling mercury in a large test tube and dropping in bits of metallic sodium until a portion of the mass poured on a cold pill tile becomes hard. This amalgam must be kept under petroleum naphtha in a stoppered bottle.

To the substance to be tested add excess of KOH. Have at hand a plug of cotton moistened with lead acetate solution; also a bit of filter paper, wet with silver nitrate. To the alkaline solution, in a long test tube, add a small piece of the sodium amalgam, insert loosely the cotton plug, and cover the tube with the paper wet with silver nitrate. Any blackening of the silver paper is due to AsH_3, evolved by action of hydrogen liberated by the sodium amalgam in presence of water. Antimony does not give this reaction, if excess of fixed alkali is present.

2. *Johnson's Test.*

"Arsenietted hydrogen is generated from compounds of arsenic in strong solution of ammonium chloride, by metallic magnesium (separation from antimony). The solution may be neutral or alkaline, but for the separation not acid." (Douglas and Prescott's Qual. Anal., 2d Ed., p. 103.)

3. Apply also tests of Reinsch, Fleitmann, Marsh, etc.

(*b.*) *For Copper.*

1. To a slightly acidified solution add a piece of bright steel, and notice the prompt deposition of copper.

2. To a slightly acid solution add potassic ferrocyanide, a bulky red-brown precipitate (Cu_2Cfy).

3. To an acid solution add excess of ammonia; a blue solution shows copper.

These reactions are very delicate, as are also those given above for arsenic.

(*c.*) *For Acetic Acid.*

1. Heat with sulphuric acid and alcohol, and form acetic ether (ethyl acetate $C_2H_5(C_2H_3O_2)$.)

2. Distil from a flask or retort using H_2SO_4, or, better, H_3PO_4, to liberate the $HC_2H_3O_2$, and apply to distillate the tests for acetic acid.

IV. A systematic analysis shows the presence of very slight traces of ferric iron, calcium, sulphuric and hydrochloric acids. For all practical purposes, Paris green may be considered good if it has a good color, and is easily and completely soluble in ammonia.

No more samples will be sent for analysis, but in their stead will be a series of articles upon the analysis of pharmaceutical drugs and chemicals. The best analyses of this month were by Thos. M. Newbold, Philadelphia, Pa.; and Geo. C. McDonald, Kalamazoo, Mich.; the prize will be divided equally between these two contestants.

"*Hedera.*" There was no H_3PO_4 in the sample. H_3AsO_4 was formed when you removed the copper by $NaHCO_3$. See II., 3, 5. If *all* the H_3AsO_4 is first reduced, no test for H_3PO_4 can be obtained.

Paris Awards.—A recent telegraphic dispatch notes the following as among the awards at the Paris Exhibition:

CLASS 47 (Chemicals, Oils, etc.).—

Silver Medal—To H. J. Baker & Bro., of New York, chemicals; Hale & Parshall, of Lyons, N. Y., essential oils; H. G. Hotchkiss, of Lyons, N. Y., essential oils; L. B. Hotchkiss, of Phelps, N. Y., essential oils; National Rubber Company, of Bristol, R. I., rubber goods; W. H. Schieffelin & Co., of New York, soluble coated pills; Valentine & Co., of New York, varnishes; C. T. White & Co., of New York, chemicals; D. M. Young & Co., of Boston, bark extract.

Bronze Medal—To Bolen & Byrne, of New York, mineral water, siphons, etc.; Henry Bower, of Philadelphia, Pa., glycerin; Robert Freeland, of South Boston, soaps; Fritzsche Bros., of New York, essential oils; Hance Bros. & Co., of Philadelphia, chemicals; Hathaway, of Boston, leather-dressing; E. F. Houghton & Co., of Philadelphia, petroleum; McKesson & Robbins, of New York, chemicals; Carniola Chemical Works, of New York, chemicals; William Tilden & Stokes, of New York, varnishes; William R. Warner & Co., of Philadelphia, chemicals; Wolf Brothers & Keech, of Centreville, Mich.; Wyeth & Brothers, of Philadelphia, chemicals.

Honorable Mention—Blackman & Allerton, of Newark, George J. Fuller, of Philadelphia, Pa., oils; Frazer Lubricator Company, of New York, axle grease; B. Keith & Co., of New York, drugs; Leonard & Ellis, of New York, lubricating oil; Mellor & Rittenhouse, of Philadelphia, Pa., licorice; Tilden & Co., of New York, chemicals; Tunyoap Manufacturing Co., of Boston, Mass., leather dressing.

In addition to the above, we have received from William R. Warner & Co. a copy of a cable message as follows:

No. 563. *Received at* PHILA., Aug. 31, 1878.

To WARNER, 1,228 Market, Phila:

Awarded, highest given pills; bronze medal.

ST. MARTIN, 11 Paris. Go. C.

According to the *Tribune* dispatch, it will be seen that Schieffelin & Co. have a silver medal for soluble coated pills, while Mr. Warner's prize was awarded for chemicals. It is reported, however, that no official announcement has yet been made, and there is likely to be considerable confusion until its exact terms are known.

PRESCRIPTIONS AND FORMULÆ.

Elixir of Phosphate of Iron.—

Phosphate of iron	256 grs.
Hydrochloric acid, dilute	q. s.
Water	1 fl. ℥
Simple elixir, q. s. ad	16 fl. ℥

Disolve the phosphate of iron in the water with the aid of just sufficient hydrochloric acid; filter if necessary, and add to the filtrate enough simple elixir to make one pint.

Simple Elixir.—The formula for this preparation, given in our June number, page 189, contained a slight mistake in the first line, where the quantity of spirit of orange should have been 2 ʒ instead of 2 ℈. Since the abbreviation "1 : 10" in the same formula appears to have been misunderstood by some of our correspondents, we will give the formula once more, as correct and as plain as possible:

Spirit of orange (1 in 10)	2 fl. ʒ
Spirit of cinnamon (1 in 10)	10 ♏
Alcohol	4 fl. ℥
Syrup	6 fl. ℥
Water	6 fl. ℥

Dissolve the spirits of orange and cinnamon in the alcohol; rub a portion of the solution with precipitated chalk, so as to form a thin, smooth paste, and then mix the remainder of the solution with this; transfer the mixture to a well-wetted plaited filter, which should be filled almost full, so as to stop the larger pores of the filter by means of the chalk. The first ounce or so of the filtrate should be caught separately and returned to the filter, until the filtrate runs perfectly clear. Wash the chalk on the filter with enough water to obtain 10 fl. ℥ of filtrate. Then add to it the syrup. The chalk should be gently dried on the filter, and be kept for use in making a fresh lot of elixir.

The spirits of orange and cinnamon are made by dissolving 1 part of each oil respectively in 9 parts of alcohol of 90 per cent. The oil of cinnamon should be that obtained from Ceylon cinnamon.

Syrupus Ferri "Protoxidi" (Syrup of Protoxide of Iron).—

Ferrous sulphate (protosulph. of iron)	4½
Sodium carbonate, crytallized	5½
Citric acid,	
Syrup,	
Water, distilled	āā q. s.

Dissolve the sulphate of iron in 16 fl. ℥ of water to which 2 fl. ℥ of syrup and 2 fl. ʒ of sulphuric acid had been added. Filter the solution and heat it to boiling to expel the air. Cover it carefully to prevent further access of air, and let it cool. Dissolve the sodium carbonate in 16 fl. ℥ of water, mixed with 1 fl. ℥ of syrup, filter, heat to boiling, and let cool in the same manner. The lower the temperature of each solution, the better. Then pour the iron solution, slowly and gently stirring, into the soda solution, throw the whole mass on a well-wetted muslin strainer, and wash the precipitate with recently-boiled, cold distilled water, containing $\frac{1}{10}$ of its bulk of syrup, until the sodium sulphate produced by double decomposition is nearly all washed out. It is not advisable to continue the washing too long, and a trifling amount of sodium sulphate which may remain is of no consequence. Dissolve the precipitate with a sufficient quantity of citric acid, and enough cold distilled water to obtain 16 fl. oz. Then add the syrup. This must be preserved in small vials, out of contact of air.

This syrup generally goes by the name of "Syrup of Protoxide or Iron," although it would more properly be called "Syrup of Protocitrate of Iron." We shall retain the former name for the present.

Elixir of "Protoxide" of Iron.—

Syrup of "protoxide" of iron,
Simple elixir.....āā 8 fl. ℥

Elixir of "Protoxide" of Iron and Quinia.—

Syrup of "protoxide" of iron..... 8 fl. ℥
Quinia sulphate.....192 grs.
Sulphuric acid, dilute..... q. s.
Simple elixir .....q. s. ad 16 fl. ℥

Mix the sulphate of quinia with 2 fl. ℥. of simple elixir, and add enough dilute sulphuric acid to dissolve it; then make up to bulk to 8 fl. ℥ with simple elixir, and add the syrup.

Elixir of Calisaya and "Protoxide" of Iron.—

Fl. extract of cinchona (Calisaya).....1½ fl. ℥
Simple elixir .....6½ fl. ℥
Syrup of "protoxide" of iron.....8 fl. ℥

Elixir of Calisaya, "Protoxide" of Iron, and Bismuth.—

Fl. extract of cinchona (Calisaya)..... 1½ fl. ℥
Simple elixir..... 5½ fl. ℥
Citrate of bismuth and ammonium....32 grs.
Syrup of "protoxide" of iron..... 8 fl. ℥
Water, hot..... 1 fl. ℥

Dissolve the citrate of bismuth and ammonium in the water; if it should not dissolve entirely, add very carefully a few drops of ammonia; then add the solution to the simple elixir, and finally add the fluid extract and syrup. Filter if necessary.

Tasteless Castor-Oil Mixture.—

Dr. W. V. Ezell, of Carrollton, La., furnishes the *Louisville Medical News* with a receipt for a castor-oil mixture which he claims to be so palatable that patients require to be told what it is in order to recognize its nature:

℞ Olei ricini..... ℥ i.
Tinct. cardamomi co..... ʒ iv.
Olei gaultheriæ.....gtt. iv.
Pulv. acaciæ,
Pulv. sacchar. alb.....āā ʒ ij.
Aq. cinnamomi.....q. s. ut ft. ℥ iv.

Misce secundum artem.

Grains de Sante du Dr. Franck.—These well-known pills are said by Hager to consist of one part of gamboge to four parts of aloes.

Paste for Furuncular Eruptions.—

Extract of fresh arnica flowers.....10 gm.
Honey.....20 gm.
Powd. althæa root.....q. s.

Mix the extract and honey, and add enough powd. althæa root to produce a tough, but still adhesive paste. This is spread upon waxed linen or other fabric, and applied two or three times: it prevents suppuration. (Dr. Planat.)

Gold-Lacquer.—The so-called gold-lacquer, which is applied to leather with a brush, consists of an alcoholic solution of shellac, containing about five to ten per cent of fuchsine.

Japanese Cement.—This beautiful cement is prepared by mixing the very finest and best rice-flower with *cold* water, letting it macerate for an hour, then heating very slowly and gradually to boiling, under constant stirring.

Cement for Kerosene Lamps.—The disadvantage of of plaster of Paris, which is commonly used to fasten the tops into kerosene lamps, is that it is porous and absorbs the fluid. Another cement, which is highly recommended, is made with three parts of resin, one part of caustic soda, and five parts of water. This composition is mixed with half its weight of plaster of Paris. It sets fimly in about three-quarters of an hour. This cement is said to have great adhesive power; not permeable by kerosene, a low conductor of heat, and only superficially affected by hot water. Zinc white, white lead, or precipitated chalk may be substituted for the plaster of Paris, but they harden more slowly.

NEW PATENTS.

[*The following list is compiled from official sources, especially for* NEW REMEDIES, *by S. H. Wales & Son, Solicitors of Patents, 10 Spruce St., New York, who will furnish gratis to subscribers any information relating to this department.*]

TRADE MARKS REGISTERED DURING JUNE, 1878.

Medical Preparations.

6,166. Dr. Charles Rowell, San Francisco, Cal. The words "Dr. Rowell's Fire of Life" and the autograph signature "Dr. Chas. Rowell."

6,167. Dr. H. D. Whitbeck & Co., Auburn, N. Y. The letters "H. D. W." arranged in the form of a monogram.

6,188. Charles R. Burrage, San Francisco, Cal. The letter "B" inclosed in the border.

6,196. John M. Falk, New York, N. Y. The words "Red Cheeks," and the said figure of the head of a female.

6,199. John A. Lomax, Chicago, Ill. The arbitrarily selected letters "J. A. L."

6,201. William T. Russell, La Fayette, Ga. The words "The Big Medicine Man of the Cherokees," and the figure of the Indian arranged as shown.

6,203. L. C. Sharpless, Philadelphia, Pa. The device or picture of a bowl with a spoon in it, and the word-symbol "Kinderessen."

6,205. Henry A. Cassebeer, Jr., New York, N. Y. The fac-simile of my signature.

6,209. Richard Matchett, Alleghany, Pa. The fanciful words "Four Fold," and the design or symbol of a bee-hive.

6,210. Edward S. Smith, New York, N. Y. The heads of the horse, bullock, sheep, and dog, the sheaves of grain, and the word and letters "U. S. of A.," and between the words "Trade" and "Mark" the figure of a hog, under which are the word and figures "Established 1876," arranged as shown.

6,214. Cram & Melcher, Chicago, Ill. The words "Fluid Lightning."

6,229. Charles R. Burrage, San Francisco, Cal. The word-symbol "Sodine."

6,230. Charles R. Burrage, San Francisco, Cal. The word-symbol "Tartine."

6,243. Upton & Co., Salem, Mass. The word "Indian."

6,244. Charles A. Aschermann, Davenport, Iowa. The arbitrarily selected word "European."

6,245. John W. Colton, Westfield, Mass. The arbitrary designation "Colton."

6,246. Charles De Cordova, New York, N. Y. The word-symbol "Seedesea."

6,257. Charles R. Burrage, San Francisco, Cal. The word-symbol "Ferri Vitrata."

6,271. Matthew S. Teller, Sandy Hill, N. Y. The figure of the horse, as hereinbefore described, with the name or word "Teller's" printed over and accompanying the same.

6,274. Jennie Heywood, New York, N. Y. The word-symbol "Heywoodian."

6,277. Emanuel Lauferty, New York, N. Y. The fancifully selected word "Royal."

6,290. Soler & Guardias, New York, N. Y. The portrait and signature of Salvator Guardias.

6,292. Weikel & Smith Spice Company, Philadelphia, Pa. The word-symbol "Traders."

6,299. Dr. H. D. Whitbeck & Co., Auburn, N. Y. The figure of a fir-tree and a person gathering the sap therefrom, the whole surrounded by two concentric circles

LABELS REGISTERED DURING JUNE, 1878.

1,563. "Syrup Glycerole of Ferrous Chloride." Geo. I. McKelway, Philadelphia, Pa.
1,564 "Cassebeer's Ammonia Lozenges." Henry A. Cassebeer, Jr., New York, N. Y.
1,565. "Hegeman & Co.'s Celebrated Pastile or Witch Hazel Lozenges." Hegeman & Co., New York, N. Y.
1,566. "Hesselroth's Universal Healing Plaster." Lawrence Hesselroth, Chicago, Ill.
1,569. "Hop Tonic." Charles R. Stuart, Cleveland, O.
1,570. "The Goodyear Syringe No. 3, etc." Goodyear Rubber Company, New York, N. Y.
1,572. "Sure Pop." Heppenheimer & Maurer, New York, N. Y.
1,575. "Camellia Lotion for Beautifying and Healing the Skin." Margaret De Voy, New York, N. Y.
1,576. "Hetherington's Tropic Fruit Laxative." John E. Hetherington, Cincinnati, O.
1,577. "Tropic Fruit Laxative." John E. Hetherington, Cincinnati, O.
1,578. "The Eradicator." James McCalvey, Frankford, Philadelphia, Pa.
1,579. "Smith's Agricultural Liniment." Thomas B. Smith, Covington, Ky.
1,581. "Williams' Vegetable Pain Exterminator." M. F. Williams & Co., Gettysburg, Pa.
1,582. "Kokoleon, an Exquisite Emollient." Emerson C. Angell, New York, N. Y.
1,583. "Romaleon, an Exquisite Emollient, etc." Emerson C. Angell, New York, N. Y.
1,587. "Liebig Coca-Beef Tonic (peptonized)." Madeline Hoffman, New York, N. Y.
1,588. "Ever Faithful." Heppenheimer & Maurer, New York, N. Y.
1,590. "Prof. Dykes' Beard Elixir." L. A. L. Smith & Co., Palatine, Ill.
1,592. "Williams & Moore's Mexican Insect Powder." Williams & Moore, Stockton, Cal.

PATENTS GRANTED DURING JUNE, 1878.

June 4th.

Atomizer, C. Weed.....204,469
Bath, vapor, C. A. Munro.....204,500
Bottle-stopper, A. Albertson.....204,472
Galvanic ring, bracelet or necklace, E. A. Osselin and A. Meyer.....204,502
Liquors, acids, and oils, receptacles for, J. F. Reinhard.....204,609
Medical compound, A. A. Solomons.....204,629
Troche, C. F. Asche.....204,520

June 11th.

Battery counterpoise, B. Kennan.....204,831
Dye-stuffs, ethyl-rosaniline, H. Caro.....204,798
Dye-stuffs from methylaniline, production of, H. Caro.....204,796
Dye-stuffs produced from naphthylamine, H. Caro.204,799
Hog-cholera compound, T. M. Wilson.....204,694
Soap, toilet, J. L. Pollak.....204,842
Truss, hernial, W. L. Tucker.....204,775

June 18th.

Ammonia or ether machine, E. Moreau and J. W. Haggerty.....205,120
Bottle-stopper, T. Massey and W. H. Rawe.....204,987
Hog-cholera compound, J. M. Keltner.....204,898
Hog-cholera compound, J. Senn.....205,147
Hydrotherapic apparatus, E. E. G. Bozerian.....204,879
Siphon, G. H. Winkler.....205,163
Syringe, S. Peters.....204,912
Truss, D. Deveron and H. Lackmann.....204,955

June 25th.

Atomizer, W. L. Hubbell.....205,389
Bottle-stopper, A. E. N. Agnel.....205,228
Dental pluggers, motor for, E. Moreau and S. W. Dennis.....205,289
Dyeing apparatus, A. V. Hysore.....205,272
Hog-cholera compound, A. R. Derrickson.....205,364
Insecticide compound, D. Maurer.....205,405
Ozone generator, G. F. H. Bartlett.....205,340
Pessary, J. W. Dawson.....205,363
Syringe, vaginal, H. T. Chamberlin.....205,353

ITEMS.

Arsenical Glucose.—Professor Clonet, of Rouen, and M. Ritter, of Nancy, have made independent series of analyses of glucose, with the result of proving that these almost, if not quite, invariably contain some traces of arsenic, varying from .0025 to .1094 per kilogramme. This is derived from the sulphuric acid employed in the manufacture. These observations are of especial interest in France, where no less than ten million kilos. of glucose are consumed annually in various elementary products. Wines are colored with caramel prepared from it, liquors and syrups are generally made with it, and to a rapidly increasing extent its employment is replacing barley in the manufacture of beer. Confectioners use it for their confitures, and pharmaciens for their syrups. M. Clonet thinks that the arsenic in wine which has been attributed to fuchsine is really due to the glucose used in making the caramel which has been added to color it.

"Vinasse" is the residue left after the distillation of beet-root molasses for the manufacture of alcohol. It is largely used in France as a source of potash.

Bad Results following the Use of "Cuticura."—Edward Wigglesworth, M.D., of Boston, writes to the *Medical and Surgical Journal* that cases have recently come to his knowledge, in which physicians have prescribed a patented medicine called "cuticura," to patients having disease of the skin, and with very bad results:

"Whether suits for malpraxis would lie in such cases it is not for me to say, but it does seem proper to state, as a warning, that the nostrum referred to is a very powerful irritant to the skin, whether this is healthy or diseased.

"Thirteen cases of acute dermatitis from the use of 'cuticura' have now come to my knowledge, and I have heard indirectly that another physician in this city has had fifteen such cases.

"My first case was that of a man having a slight eczema of the fore-arm. He received a simple prescription and departed, but returned in a few days, and there was hardly a hair follicle upon the whole fore-arm which was not the seat of a well developed pustule. General pain, heat, redness, and swelling were also present. He had not used the prescription, but had substituted, upon his own responsibility, the 'cuticura.' The use of this being discontinued, the patient speedily recovered.

"My latest case was seen in consultation. 'Cuticura' had been applied to a leg affected with chronic eczema. The result was an acute dermatitis, which had lasted a week at the time when the patient was seen.

"At the time of application, a slight itching being felt upon the thigh, a single 'wipe' was given across the part with the rag used in applying the 'cuticura.' The result was an irregular, reddish, hot, painful stripe marking exactly the line of impact of the rag."

Balata, a Substitute for Gutta-Percha.—Balata, which has only been known for a short time, is inferior in the extent of its uses to caoutchouc, but surpasses gutta-percha, and is said to have already become an important article of commerce. It is the milky sap of the Bully-tree, that flourishes on the banks of the Orinoco and the Amazon in South America. The operation of collecting the gum is similar in every respect to that employed with caoutchouc and gutta-percha, and need not therefore be described.

It resembles gutta-percha so closely in its general properties that much of it is shipped from Guiana and sold yearly for gutta-percha—although it has many points of superiority. It is tasteless, gives an agreeable odor on be-

ing warmed, may be cut like gutta-percha, is tough and leathery, is remarkably flexible, and far more elastic than gutta-percha. It becomes soft, and may be joined piece to piece, like gutta-percha, at about 120° Fahr., but requires 270° Fahr. before melting (higher than gutta-percha).

It is completely soluble in benzole and carbon di-sulphide in the cold. Turpentine dissolves it with the application of heat, while it is only partially soluble in anhydrous alcohol and ether.

It becomes strongly electrified by friction, and is a better insulator of heat and electricity than gutta-percha, on which account it may find considerable application for electrical and telegraphic uses.

Caustic alkalies and concentrated hydrochloric acid do not attack it; but concentrated sulphuric and nitric acids attack it as they do gutta-percha, which it closely resembles in all other properties.—*Boston Journal of Commerce.*

Peruvian Nitre.—The *Polytechnic Review* publishes, in a recent number, portions of a letter from Mr. E. Delgado, a Peruvian engineer, which gives some facts of very general interest regarding the magnitude of the Peruvian nitre business, and the new policy of that government for controlling the production so as to insure a permanent revenue therefrom.

Nitrate of soda or salitre (as it is called there, from its resemblance to saltpetre), a product of Tarapaca, is extracted from an immense pampa (plateau) of several hundred square miles area. The prime material is called *caliche*, a mixture of nitrate of soda and earth, with more or less iodine, and at times borax, containing from 30 to 60 per cent of nitrate. It is found in these pampas in beds of several feet thickness, and covered with two or more feet of loose earth. After this caliche is extracted by picks and even by blasting, it is transported to the factory, where it is washed by boiling, and crystallized by a method and apparatus alike in all the factories, and well-known there. This private industry, due to its great extent, was producing more than eight millions of quintals of salitre, of 93 to 97 per cent fineness, and making a great competition in Europe, where most of it was exported with guano as manure. On account of the home competition between the producers and the government itself, Congress approved a bill sent in by the last administration to raise the export tax or duty from 5 cents to 1.60 soles a quintal, and to buy the factories offered to the government at a valuation made by a commission of engineers, in order to monopolize the article. The executive, with this authorization, commenced buying the factories at prices already determined by itself, and to make contracts for elaborating salitre with the same parties that had sold out. The total expropriation amounts to 13,423,042 soles, paid in certificates bearing 8 per cent interest, and redeemable in two years at 44 pence—89 cents—per sol, interest being paid also on drafts at the same rate.

"Quotations down to May 12th rate the value of the nitrate to be 2.85 to 2.95 soles the quintal; equal to 2.56 to 2.65 cents gold per pound. It is worth 3½ cents per pound here."

Automatic Cork-Cutting Machine.—There are several cork-cutting machines exhibited at the International Exposition at Paris, but only one of these, produced by the *Société anonyme des Liéges* (Paris, Rue du Delta 13), works automatically. The knife is replaced by a steel-ribbon, which revolves around terminal wheels, like a band-saw. The pieces of cork, cut, as usual into cubes, are carried to a self-acting clasp, which not only revolves, but has also a perpendicular motion. As soon as the cork is cut, the clasp opens; throws it out, and returns to its original position to receive a new piece. Since cork-wood rapidly blunts sharp-edged tools, the steel-ribbon is made to pass through a sharpening apparatus placed on the side opposite to where the ribbon performs its work.

Gelatin-Dynamite is a new substance, or rather mixture, prepared by Mr. A. Nobel, the inventor of dynamite, which is at least fifty per cent more powerful than the latter. It consists of ninty-four to ninty-five per cent nitroglycerin and five to six per cent collodion. It has a tough consistency, but may be cut with a knife or with scissors, and is absolutely impermeable to water—a very important property. It is ignited in the same manner as dynamite.

A Prize of 10,000 francs, founded by Dr. Guinard, has been awarded in Belgium to M. Melsens, for his discovery of the effects of iodide of potassium as a means of removing poisonous metals, such as mercury, lead, etc., from the body. He had already previously received the Montyon prize from the French Académie des Sciences.

A Chinese Wine, according to *L'Union Medical*, is made by adding to water a certain quantity of a powder or a sort of cake made by pulverizing oats, barley, or rye, alone or together, with the addition, after they have been exposed to a degree of fermentation, of aromatic herbs. It is an alcohol [? ED. N.R.] rather than a wine, and is consumed by the Chinese in large quantities.

A Method of Separating Stearic and Oleic Acids, proceeding from the saponification of tallow, has been communicated to the French Academy of Sciences by M. David. The principle of the process is based on the fact that when acetic acid is slowly dropped into a solution of alcohol and oleic acid, at a certain stage the oleic acid is found to separate itself suddenly and completely.

Gas-Cloth is a name given by Dr. Hirzel, of Leipzig, to a gas and water-tight stuff made by placing a piece of gutta-percha tissue smoothly between two pieces of material, not too coarse or dense, like muslin, and then passing the three between heated rollers, by which means the muslin and gutta-percha become closely adherent and quite impermeable.

Benzoated Alcohol is much recommended by Dr. Templeton as a basis of a valuable and pleasant antiseptic solution. Half an ounce of pure benzoic acid, prepared from the resin, is to be dissolved in a pint of spirits of wine. Mixed with water it makes a pleasant lotion, gargle, or spray.

Benzoate of Soda has been employed by Dr. Klebs, of Prague, in infectious fevers in doses of 10 to 25 grammes (150 to 380 grains) daily. The febrile paroxysm does not cease so rapidly as when quinia or salicylate of soda is used, but its effects are more certain and permanent. Moreover, there are absolutely no unpleasant after-effects, even when the use of the medicine is prolonged.

Chinese Rice Paper is not really a paper, but consists of the pith of the stems of *Aralia papyrifera;* cut with large and very sharp knives, either radially into into smooth, or spirally into large layers as thin as paper, which are pressed smooth, and are used, in China, for delicate aquarelle paintings, and in Europe in the manufacture of artificial flowers.

Gypsum and its Use in Brewing.—Hard waters are so much superior to soft in the making of beer, that it is now customary, in England, to rectify any deficiency of lime by adding gypsum to the water used. The sacharine principles of malt are believed to be more readily extracted, and the albuminoid matters, which interfere with the keeping qualities of beer, are rendered less soluble. Beers brewed with water containing gypsum are, moreover, paler, so it is said, than those made with ordinary waters, and become bright without the use of finings.

Casts from Living Forms.—Among the novelties in the Russian Department of the Paris Exhibition are some remarkable casts of two human figures in plaster, by a method which is not known. The results are so marvellously acurate that the process is worth the attention of those who are interested in the preservation of casts of deformities, skin eruptions, plastic operations, morbid growths, etc. The correspondent of the *Philadelphia Telegraph* writes as follows:

"One lies slightly turned upon her side, her lips parted in a smile, as though she was striving to suppress a laugh. The other, who has much the finer form of the two, lies

face downward, her feet crossed, and her head pillowed on her folded arms, as though she had thrown herself down to sleep. The minutest details of the texture of the skin, nails, etc., are very perfectly reproduced, the 'goose flesh' wherewith the skin is covered being amusingly noticeable, and showing that the preparation used for these casts, the composition whereof is a secret, must be applied cold. Then all the little indentations in the soles of the feet and the palms of the hand, and the curves of the nails, and their rimming of skin and flesh are reproduced with even startling accuracy.

Camphor as a Cure for Tobacco Sickness.—It is said that a dose of camphor will cure the sickness caused by tobacco. Who has tried it?

Adulteration of Otto of Roses.—A German chemist had met with a sample of rose otto adulterated with what is believed to be paraffin, and states that he had previously found splinters of glass in it.

Explosive Prescriptions.—A German contemporary tell us that the following prescription was presented at a Roumanian pharmacy:—

Kali hypermang.....5.0
Mucil. camphoræ.....200
M. D. s. Externe.

The permanganate was dissolved in water, and shaken with the mucilage. The color, at first red, was soon destroyed, and after a short time the mixture set into a stiff jelly, which could not be got out of the bottle. On another occasion was ordered a mixture of—

Kali hypermanganic.....2
Morphium acetic.....0.05

When these were rubbed together there was a rapid emission of sparks, followed by an explosion and a suffocating smell like chlorine. When pure morphia and the sulphate and chloride were tried in place of the acetate, the effects were similar: they were most violent in the last.

Antidote to Arsenic.—It has been noted by Rouyer that freshly precipitated sesquihydrate of iron, although an antidote for arsenious acid (arsenic of the shops), fails entirely to counteract the action of arseniate of soda or arsenite of potassa (Fowler's solution), but that a mixture of a solution of the sesquichloride of iron and the oxide of magnesium will counteract the effect of these salts, as well as the arsenious acid itself, and hence this mixture is always to be preferred to the hydrate in cases of poisoning by arsenic. The officinal solution of the sesquichloride of iron should first be administered, and afterwards the magnesia. In one hour after the administration of the antidote, a cathartic should be given. In all cases acid drinks (such as lemonade) are to be avoided, since the compounds they form are soluble.

The Detection of Prussic Acid.—A very simple method of showing that there is no free hydrocyanic acid in the kernels of peach, cherry, and plum stones, or bitter almonds, but that it is formed on heating the same with water, is given in the *Polytechnisches Notizblatt*. A long strip of Swedish filter paper is soaked in the tincture of gum guaiacum (1 to 20) and dried. It is next passed through a solution of sulphate of copper in 2,000 of water, when the paper will not be changed at all in color. A few freshly-pounded bitter almonds are put in a two-litre flask of water. On suspending in it the strip of test-paper abovcd described, the paper will remain white, but, on pouring into the flask a single crushed bitter almond that has been *warmed* with water, the test paper will at once be colored blue by the hydrocyanic acid generated in the flask, without bringing the paper in the contact with the liquid.

Surgical Dressings and Appliances.—Some of our manufacturers of and dealers in surgical and medical apparatus may derive suggestions from the following list of antiseptic and medicated dressings and appliances, which is condensed from the price-lists of several European firms, and would therefore indicate a pretty general demand for them on the Continent:

Carded Cotton is prepared in great variety of forms, viz.: —loose in bulk, in form of "compresses," 14 cm. long and 11 cm. wide; or 10.5 cm. long and 6.5 wide—"eye-compresses," single and double spectacle-shaped—flesh-colored, for ear-tampons—benzoated; according to Dr. Volkmann; containing 3 per cent of benzoic acid (colored yellow)—benzoated, containing 11 per cent (colored blue) —benzoated, containing 5 per cent (colored white)—ferrated; saturated with ferric chloride and dried. Used as styptic—glycerinated, containing 5 per cent of glycerin—iodized, containing 1 per cent of iodine—salicylated, containing 4 per cent of salicylic acid (white)—salicylated, containing 11 per cent (colored red)—thymolated, containing 5 per cent of thymol—picrated; 10 gm. of cotton are dipped into a solution of 0.25 gm. of picric acid in 25 gm. of ether or 94 per cent of alcohol; expressed and dried—borated; 10 gm. of cotton are dipped into a hot saturated solution of boracic acid, expressed and drid. [Lister directs the application of this dressing to be made as follows: First clean the wound with an 8-per-cent of zinc chloride solution, and the surrounding sound skin with strong solution of carbolic acid; then apply a piece of protective silk dipped into concentrated solution of boracic acid; upon this is placed the borated cotton, which is previously freshly dipped into solution of boracic acid, and is made to overlap the first dressing on all sides]—carbolized. Several strengths. [Cut into convenient pieces; this form is used as sponge. Wadding having been cut into cubes of 1 to 2 inches in diameter, they are placed for 5 or 6 minutes into a 2-per-cent solution of carbolic acid, frequently kneaded, then expressed, rolled up into balls, and preserved in tight bottles. When using them as sponge, they only need to be dipped once into water. They are extremely soft, cheap, and absorbent.]

Jute, bleached, carded—unbleached, carded—carbolized, in strips, according to Dr. Münnich—salicylated, 4 and 11 per cent, carded.

Gauze, carbolized (Lister's), bleached and unbleached.
Bandage, antiseptic (Lister's).
Mackintosh (Lister's).
Silk protective (Lister's).
Cotton protective, a substitute for the former.
Catgut, carbolized. Nos. 0, 1, 2, 3 (Lister's).
" prepared with benzoic acid and glycerin, according to Dr. Sawostitzky. This is easier tied, is less irritating, and more rapidly absorbed.
Drainage-tube, carbolized. Nos. 1 to 4 (Lister's).
Silk, carbolized. Nos. 1 to 3.
Lint, borated.
Gauze, salicylated, containing 11 per cent of salicylic acid—thymolated, according to Dr. Ranke, who uses all of Lister's appliances, but substitutes thymol in all cases for carbolic acid.

The following are varieties of soaps for hygienic and medicinal purposes:

Soap—benzoated, camphorated, carbolated, salicylated, thymolated, pumice, peanut-oil, bile, glycerin, honey, iodide of sodium, sulphurated iodide of sodium, herb, almond, balsam of Peru, sulphur, iodized sulphur, storax, tannin, turpentine, tar, violet.

Vegetable Parchment-paper, first dipped into glycerin, then soaked in carbolic acid, is used as a cheap substitute for Lister's silk-protective.

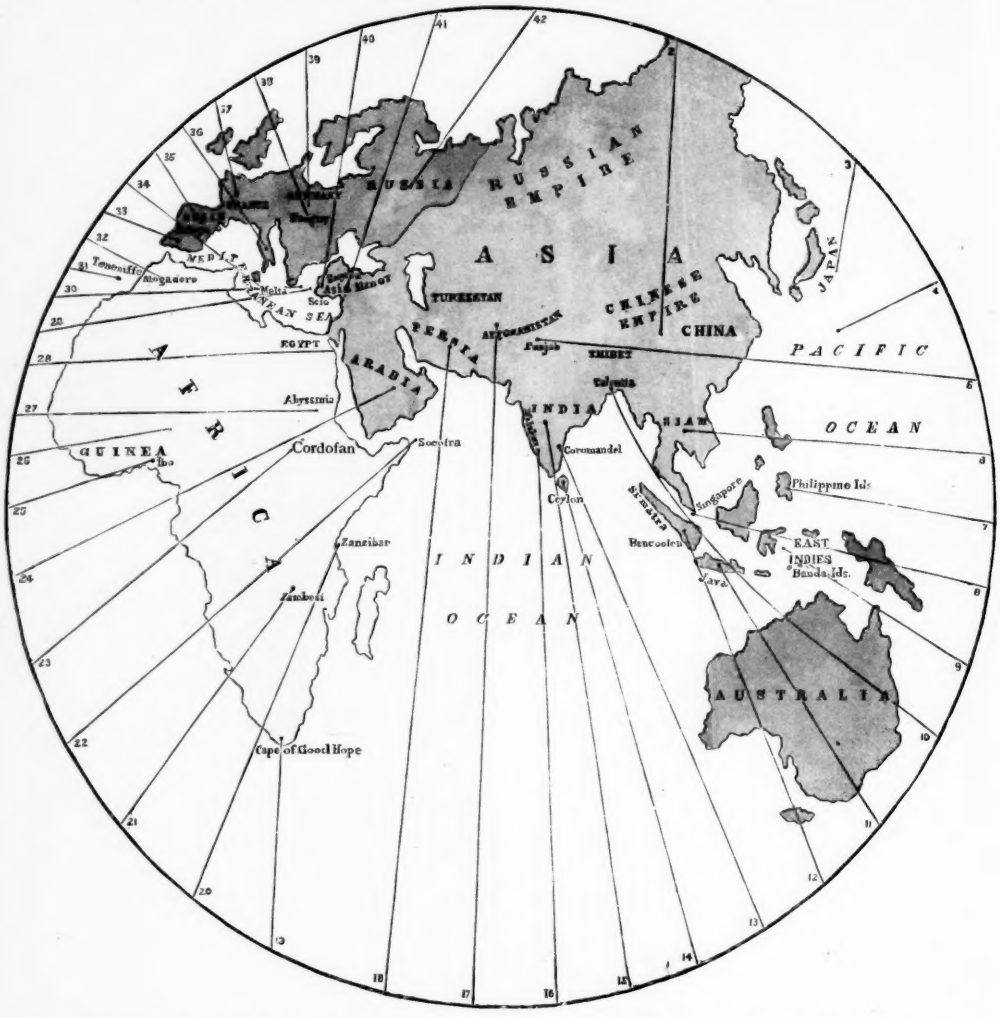
New Patent Medicines.—The following appears in a recent issue of the official gazette:

202,801.—Herman Falk, Nashville, Tenn.

Brief.—An extract is made of the leaves of corn (Zea mays) by boiling the dry leaves in water until a thick gum is formed. Of this extract of Zea mays, or Indian corn, take fifty grains; sulphate of quinine, thirty-four grains; sulphuric acid, eighteen drops; extract of garlic, ten grains; and powdered licorice sufficient, and form thirty-six pills.

Claim.—The remedial composition for chills and fever, consisting of extract of Zea mays, sulphate of quinine, sulphuric acid, aad extract of allium sativum, substantially as described.

THE MATERIA MEDICA OF THE EASTERN HEMISPHERE.



2 Rheum. Camphora. Moschus. Cinnam. (Cassia). Anisum stell. (South. China). [Galanga]. Curcuma.

3 Camphora.

4 Cetaceum.

5 Chiretta. Moschus (Thibet). Ammoniacum.

6 Benzoinum. Zingiber. Gambogia.

7 Ignatia. [Dita].

8 Catechu (pall.) Ol. Cajuputi Guttapercha.

9 Myristica. Catechu. Elemi. Nux Vomica. Piper. Santalum. Caryophyllus. Croton.

10 Ricinus Olibanum. Nux Vom. Catechu. Kino. [Opium]. Tamarindus.

11 Cubeba. [Sang. Draconis]. Cajuput.

12 Benzoinum. Piper. Myristica

13 Senna (Ind.). Belæ Fruct. Santalum. Arecæ Nuces. Cocculus. Kamala.

14 Cinnamomum. Curcuma. Cardamom Santalum. Croton. Caffea.

15 Cannabis Ind. Hemidesmus. Kamala. Curcuma. Linum. Cocculus. [Opium].

16 Belæ Fruct. Cardamom. Kino. Tamarindus. Sesamum.

17 Asafœtida. Sumbul (in Turkestan).

18 Ammoniacum. Asafœtida. Galbanum. Sagapenum.

19 Buchu. Aloe. (Maranta).

20 Capsicum Colombo (further south). Caryophyllus.

21 Colombo.

22 Aloe Socotr. On Afr. Coast opp South Arabia: Olibanum.

23 Acacia. Senna.

24 Myrrha. Olibanum. Caffea. Senna.

25 Calabar B. Capsicum. Zingiber Ol. Palmæ.

26 Calabar. Grana Paradisi.

27 Kousso. Myrrha. Acacia.

28 Cassia fist. Carthamus. Senna (further south). Anisum.

29 Mastiche. Scilla.

30 Terebinthina Chia.

31 Coccus. Staphysagria.

32 Amygdalus. Euphorbium Granatum. Pyrethrum. Colocynthus Acacia.

33 Amygdalus. Uvæ Passæ. Citrus. Scilla. Oliva. Colocynthus. Crocus.

34 Fœniculum. Anisum. Cuminum.

35 Ergota. Anisum. Crocus. Pyrethrum. Quercus Suber. Oliva. Citrus.

36 Crocus. Oliva. Iris. Manna (in Sicily).

37 Crocus. Rubia. Rosa. Citrus (south). Lactucarium.

38 Cantharis. Sabina. Origanum. [Great Britain: *see special list.*]

39 Aconitum. Carum Belladonna. Anisum. Gentiana. Anthemis. Arnica Ergota. Colchicum. Conium. Digitalis

40 Ficus. Papaver. Colocynthus. Styrax Galla.

41 Tragacantha. Scammonium. Opium.

42 Santonica. Cantharis. Angelica. Ichthyocolla. Juniperus. Castoreum. Linum. Lycopodium.

THE MATERIA MEDICA OF THE WESTERN HEMISPHERE.

43 Cascarilla. Spongia.

44 Zingiber. Pimenta. Quassia Simaruba. Saccharum. Cassia fist. Canella. Mucuna. Tamarindus. Guaiacum. Tabacum.

45 Quassia. Guaiacum. Sarsaparilla.

46 Aloe Barbadensis.

47 Nectandra. Simaruba. [India Rubber]. Angustura (in Venezuela). [Curare].

48 Copaiva. Sarsaparilla. Goa Powder.

49 Pareira. Lignum Braziliense. Vanilla. Ipecacuanha.

50 Pareira. Ipecacuanha. Tapioca. Jaborandi. Sarsaparilla.

51 Ipecacuanha. Maté. Contrayerva.

52 Cinchona Calisaya (*et al.* Cinch.)

53 Krameria. Matico. Coca. Maté. Quillaya (furth. south). Coto bark.

54 Cinchona pallida. (Cinch. officinalis *et al.*)

55 Cinchona rubra (C. succirubra *et al.*).

56 Bals. Tolu. Cinchona.

57 Hæmatoxylum.

58 Coccus. Sabadilla. Jalapa. Vanilla. Sarsaparilla. Cacao.

59 Serpentaria. Tabacum, etc. *See special list.*

60 Ricinus. Lobelia. Podophyllum. Sassafras. Linum. Senega. Veratrum Viride, etc. *See special list.*

61 Sassafras. Abies (Terebinth. Canad.) Sanguinaria, etc.

62 Castoreum.

64 Bals. Peruv. (Coast of San Salvador, 89° E. of Greenw. 14° 30' N., opposite to where dot is placed on map, on west coast of Central America).